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Illustrations OF HOSPITAL PRACTICE:

METROPOLITAN AND PROVINCIAL.

ST. MARY'S HOSPITAL.

VAGINAL CYSTOCELE.

Under the care of ISAAC BAKER BROWN, Esq.

[*From his Hospital Case-Book.*]

ELIZABETH J., aged 35, was admitted on July 6th, on account of prolapsus of the bladder. She was a laundress, and therefore had to do a great deal of work in the upright position. She had had six children, and had miscarried five times. Sixteen years ago, at the birth of her second child, she noticed bearing-down pain, and a protrusion, as she thought, of the womb. During her subsequent pregnancies, she suffered much from the same pain. The protrusion was now pronounced to be of the bladder; micturition became difficult, especially after having been in the erect position for some time, and she had to press back the prolapsus before making water. She had been unable to do her work with comfort for the last five years.

She was a very nervous person, with pale face, and evidently out of health. On examination, the walls of the vagina were seen to be in a very lax condition, and a prolapsus of the bladder and anterior wall of the vagina as far as the vulva, was observed. It could readily be returned, but came down again to some extent almost immediately.

July 7th. Mr. Brown proceeded to perform an operation, for the purpose of narrowing the canal of the vagina and increasing the depth of the perinæum. The patient having been brought under the influence of chloroform, the mucous membrane was dissected off the posterior part of the vagina in the form of a horse-shoe, and a diamond-shaped piece of mucous membrane was removed from each side of the urethra. The edges of the latter were brought together by the interrupted suture, and the former were brought into apposition by two deep quilled sutures and interrupted sutures superficially. She was then sent to bed, a catheter introduced, and two grains of opium were given.

The bowels were kept confined by opium for ten days. Then an injection was given.

The deep sutures were removed at the end of the third day; the others (as well the superficial ones as those uniting the wall of the vagina, where the diamond-shaped piece was removed) were allowed to cut out. She was confined to bed for a month, and then got up and walked about. In the course of a week she went out. She was (for the time at least) perfectly cured, no protrusion being noticeable. She was better in health than when she was admitted.

REMARKS. We have quoted this case from Mr. Brown's case-book as an instance of a disease which is, we believe, little studied or recognised; but which is common in Mr. Brown's practice, and must therefore, we suppose, prevail more extensively than is generally supposed. If so, and if any considerable proportion of the cases of partial incontinence of urine, which occur so commonly among females somewhat advanced in life and who have often been pregnant, is due to the condition of the vagina here noticed, and which presents a sort of hernia of the fundus of the bladder into the cavity of that tube, Mr. Brown will deserve the thanks of the profession for calling their attention to a malady so distressing, so easily cured, and so universally overlooked. It will be noticed that we have taken the precaution of speaking of the cure as temporary. This is not to be taken as any indication of a doubt as to the efficiency of the operation; but because experience has proved that it is impossible to give any final judgment on these cases until the cicatrix has been exposed to the pressure of the superjacent parts for many months, and has given evidence by its continued solidity of its powers to resist that pressure during the remainder of life. We hope to be able to report at some future time that this patient has been again seen, and that the cicatrix has been proved to possess this solidity.

HOSPITAL FOR SICK CHILDREN.

I. SEBACEOUS TUMOUR CAUSING ABSORPTION OF THE BONES OF THE SKULL.

Under the care of ATHOL A. JOHNSON, Esq.

SEBACEOUS tumours of the scalp are usually very simple affairs; and, although the operation for their removal has its peculiar dangers connected with the liability of the scalp to erysipelatous inflammation, especially in persons of advanced age and feeble or impaired constitution, it is usually performed without any thought of danger from the anatomical relations of the cyst. Nevertheless, such danger, though in rare cases, does sometimes occur from the perforation of the bones of the skull by the tumour—the result, in most cases, it is to be presumed, of pressure, though instances of congenital cystic tumours are on record, in which it is possible that the formation may have been originally internal to the bones, which have been formed over the tumour, so that the latter has been enclosed within the ossifying cranium. The attention of the College of Surgeons was called to this fact, we believe, by Mr. Prescott Hewett, in his recent course of lectures. Many surgeons have noticed instances in which the common sebaceous encysted tumour has produced erosion of the bones of the skull. Thus Nélaton (*Pathologie Chirurgicale*, art. Affections de la Tête, Tumeurs Enkystées) speaks, though very cursorily, of two cases reported by Lenoir and Delpech, in which this peculiarity was observed. The best description, however, of such a case, with which we are acquainted, is in the splendid work of Auvert (*Selecta Praxis Medico-Chirurgicæ*), in which, Table II, Fig. 1, there is a very perfect representation of a frontal bone in which a depression is seen occasioned by a sebaceous tumour situated almost in the same position as the one of which we give notes to-day. In that case, however, there was a distinct perforation of the inner table, so that the cyst of the tumour had lain in direct contact with the dura mater.

The patient was a soldier, aged 25; and the operation was undertaken with the knowledge that the external table was absorbed; but, from the absence of pulsation, it was hoped that it was separated by bone from the cranial cavity. The operator was successful in removing the cyst entire; nor does it appear that the dura mater was in any way injured. Diffuse inflammation of the scalp, and of the membranes of the brain, followed, and proved fatal.

We remember also seeing a case in the practice of Mr. Prescott Hewett, in which a tumour, which was supposed to be one of the common cysts of the orbit, and which was so as to its structure, had perforated a portion, at any rate, of the roof of the orbit, and where (if we remember rightly) the dura mater was exposed by the removal of the cyst. The patient did well.

In December last, a child, 3 years old, was taken to the Hospital for Sick Children, with a tumour, about the size of a small walnut, corresponding to the middle part of the upper border of the frontal bone. There was no discoloration of the skin, and the anterior fontanelle was quite closed. The tumour had first made its appearance when the child was eight months old: it was then small, but had gradually increased in size. It was removed by Mr. Athol Johnson, and was found to consist of a cyst filled with sebaceous matter, placed under the occipito-frontalis. The under surface of the cyst was inti-

mately adherent to the periosteum around; it was, moreover, sunk deep in the bone, which presented a cup-like cavity. Perforation of the bone was not actually made out; nevertheless, as there could have been but a very thin plate of bone left, Mr. Athol Johnson thought it advisable, after emptying the cyst, not to remove the small portion adhering to the centre of the cup-like depression. The child did well. The parts healed, with a depressed scar adherent to the bone beneath.

When seen a few days ago, the wound was firmly healed, but the depression had not been filled up. The child was in perfect health.

II. SYME'S AMPUTATION.

We had the opportunity of seeing lately three stumps of Syme's amputation; and, as there is at present some difference of opinion with respect to the results of this operation, we have thought it advisable to describe the state of the parts. We accordingly append a short description of each case.

Case I was that of a girl, named Sarah Fennell, a patient of Mr. A. Johnson, at the Children's Hospital, in whom the operation was performed in June 1854, for disease of the tarsus, she being at that time 5 years old. There was nothing peculiar about the operation; no sloughing took place. Four years have now elapsed since the operation, and she suffers no inconvenience in the stump, being able to bear her weight with comfort to herself. She wears a sort of bucket-boot, made by a common shoemaker, and can walk or run about as well as any girl of her age. A cast has been taken.

Case II is that of a boy, at the same hospital, named W. C., aged 5, in whom the operation was performed fourteen months since, for disease affecting the os calcis and the astragalus. An attempt had been made at another London Hospital to save the foot by removing the diseased bone, but unsuccessfully; and, the health beginning to suffer, Mr. Johnson performed Syme's operation. The part united well, without any sloughing; and the boy is able to run about on the stump, without any shoe at all. He wears, however, a similar boot to that of Sarah Fennell.

In both cases, the amount of shortening of the limb is very slight. A cast has been taken of this stump also.

Case III. The third case was shown in the theatre of St. George's Hospital, a few days since, previous to the removal of the stump by amputation through the leg. The patient, a young and healthy man, had had the operation performed two years ago, in the country. His convalescence was very rapid, so much so, indeed, that he was only confined to bed for a fortnight; and the wound seems to have been soundly healed in a month. It was a long while, however, before he began to use it, as he was waiting till he could procure an artificial foot; and, when he did do so, he soon found that the stump was painful, and that the skin was cold to the touch. The pain was not so great as to prevent him getting about; but at night, when he had been using the stump for some hours, it used to become much worse, and to be accompanied by spasmodic movements of the limb. This tenderness to pressure was remarkable at one point of the stump just below the middle of its anterior extremity, which was supposed to depend on some affection of the anterior tibial nerve. The skin was blue and cold. As the patient represented that the annoyance which the stump occasioned to him was intolerable, Mr. Pollock acceded to his request to remove it.

On examining the stump, it was found to be quite soundly healed, and was in every respect a very healthy and good one, except that the nerves terminated in enlarged extremities, forming a species of small tumour. This was most distinct on the posterior tibial nerve, in which the swelling was larger and lobulated. It was formed principally, if not exclusively, of fibrous tissue, and adhered firmly to the back of the tibia. The swelling on the anterior tibial nerve was smaller, but was more tucked in under the section of the bone, so that it was probably more pressed on in walking. The arteries were pervious down to the end of the stump. It was noticed that the fibula was prolonged lower than the section of the tibia, as if its end had grown since its division. To this elongated portion the tendo Achillis was inserted.

Remarks. The first two cases are good instances of the great advantage of this operation, when successful; viz., that it enables persons to dispense with the services of the instrument-maker, and to get on perfectly well with a boot made by their own shoemaker. How great this advantage is to the poor, no one will question. Who would hire a domestic servant with a wooden leg? while, in Mr. Johnson's first case, there is every probability that the little girl will be so occupied when she grows up. It is indeed said by some instrument-makers, that they find it easier to adapt an artificial foot to well made stumps of the leg, than to those left by Syme's amputation; but what we are contending for now is, that it is very important, when possible, to enable patients to dispense with the aid of an instrument-maker entirely.

With regard to the third case, the stump has indeed proved useless, and has been obliged to be sacrificed. This, however, did not arise from any cause essential to the operation, but from an accidental affection of the stump, which might just as well follow on an amputation of the leg. It may, indeed, possibly be the case, that, in cutting the posterior flap, operators are apt to leave the nerve so long as to come on to the lower end of the bone, and thus to be in the way of pressure when the stump is used. This was not clearly proved in the case before us, since the posterior tibial nerve, which would be most likely to be left long, was not apparently so much in the way of pressure as the anterior; but it is worth remembering, that such a cause may be the occasion of future tenderness in the stump, as nothing would be easier than to take off any portion of either of these nerves which might seem advisable during the operation.

CALCUTTA EYE INFIRMARY.

VARIOLOUS CORNEITIS.

By William Martin, Esq., F.R.C.S., late Professor of Ophthalmic Surgery, Calcutta Medical College.

Small-pox has long been recognised as a prolific cause, predisposing or exciting, of various diseases of the eye. These more commonly affect the external parts; but not rarely we find iritis and inflammations of the internal tunics generally, owing to a recent attack of small-pox. Of affections of the external parts from this cause, the most troublesome are inflammations of the conjunctiva, sclerotica, or cornea; ulcers of the cornea, inflammation of the lacrymal passages, etc., etc. I propose to relate a few instances of corneitis, arising at a not remote period from an attack of small-pox.

Case I. Noor Ali, aged 5, was admitted as an in-patient May 9th, 1856, having secondary ulcer of the cornea, with a corneal abscess. This commenced nine days after the separation of the crusts, in an attack of variola not occurring from inoculation. Much inflammation was present. The treatment consisted in the application of leeches and a blister, and the administration of a purgative.

May 13th. He was ordered to take a grain of disulphate of quinine three times a day, and to have cold water applied to the eye.

May 16th. The quinine was repeated four times a day.

May 20th. There was an extensive sloughing ulcer. The medicines were repeated; and three grains of mercury with chalk were prescribed, to be taken twice a day.

May 23rd. The ulcer was inclined to heal.

June 2nd. The ulcer was nearly healed. The matter of the abscess had become absorbed. The cornea was densely opaque. The powder was omitted; the quinine and cold water application were continued.

June 12th. He was doing well. The medicine was continued, and a blister was applied.

June 20th. He left the Hospital, having only corneal opacities left.

Remarks. In this case, the commencement of the attack of ophthalmia took place at a period more remote from the invasion of variola than is usual. There could be no reasonable doubt about the cause. It is to be observed, that the disease was of as severe and intractable a nature as a primary variolous ulcer could have been, although all external manifestations of the constitutional disease had disappeared for many days. This is perhaps to be accounted for by the fact of the constitution itself having had time to become tainted by a special cachexia. The curability of such a dangerous local affection, when coexisting with this cachectic state of the system, is interesting and instructive.

Case II. Dwarkanauth, aged 30, was admitted as an in-patient May 27th, 1856, with variolous corneitis, commencing twenty days after the appearance of the eruption in variola supervening upon inoculation. The treatment consisted in leeching, blisters, calomel, with opium and quinine. He was eventually cured.

Remarks. Here also there was a sufficient interval between the invasion of the constitutional disorder and the local affection to make it probable that the variola acted as a predis-

posing rather than an exciting cause. I have generally found that the cases of variola which were induced by inoculation have been milder than others; and this may account for the facility with which this patient was cured. I conclude that this may be attributed to the absence of any marked constitutional debility.

Case III. Goolab, aged 25, became an out-patient May 17th, 1856, with variolous corneitis. The disease commenced twelve days after the separation of the crusts. The same remarks are here applicable with regard to the interval of time between the variolous outbreak and the invasion of the corneitis.

Case IV. Ramjaun Ali, aged 22, became an out-patient June 6th, 1846, on account of corneitis and its results—dense opacities of the cornea. The inflammation had commenced fourteen days after the invasion of the fever. The opacities were in part removed.

Remarks. In this case, the interval of time was not as great, but the local affection seems to have been of a mild character; for I was only called upon to treat the consequences of the corneitis, and the case was in progress when the patient left off attending. These results were not indelible.

Case V. Onrajee, aged 9, became an out-patient on June 9th, 1856, having chronic abscess of the cornea. Three months previously, an attack of variola came on, not from inoculation. The friends said that, at this time there was a small-pox pustule on the surface of the eye, and that the crust from this became separated at the same time as from the pustules on other parts of the body. Inflammation of the eye came on ten days after this separation. The treatment consisted of local depletion, purgatives, hydrargyrum cum cretâ, etc.

June 23rd. The mouth had become slightly affected; but the patient was improving, and the matter of the abscess was becoming absorbed.

July 23rd. The abscess was healed. The opacities of the cornea in its vicinity were thinning. The patient was in process of being cured.

Remarks. The corneitis does not seem here to have been part of the external manifestation of the variola, but to have occurred subsequently. The pustules, said to have been in coexistence with the small-pox in the body, most probably only affected the eyelids.

Case VI. Banepur, aged 10, was admitted as an out-patient on July 14th, 1856. Variolous ophthalmia was present in both eyes. In the right, in which the attack was of a primary nature, the cornea had sloughed; in the left, the disease had appeared secondarily—the effect being extensive ulceration and opacities of the cornea. The attack of small-pox had occurred six months previously.

Remarks. This case is particularly instructive; as, some time after the invasion of the primary eruption, which was attended by so much local disease that one cornea was destroyed by sloughing, another distinct disease, involving also specially the cornea in the other eye, was set up. Nothing seems more probable than that the primary affection was a variolous pustule, having its seat in the conjunctiva and cornea, running a rapid course, and producing mortification of those parts in the same way that variolous pustules act in other parts of the body; and that after a certain interval of time, when the local affection had subsided, the constitutional taint predisposed to the secondary inflammation which seems in such cases to have a tendency to attack some of the vital parts of the organ, which had escaped the more dangerous primary disease. This secondary affection being altogether milder than the other; in this instance, there is every reason for thinking that the disease was perfectly curable.

General Remarks. The cases above noticed afford good instances of the particular forms of the corneitis, which owes its origin to variola. In almost all, the disease showed itself in the most severe form, the one which rapidly runs into destructive ulceration of the structure, instead of into the granulo-vascular degeneration. This proneness to a destructive form of inflammation would be easily accounted for if we could look upon the disease as simply a variolous pustule formed upon the membrane, as in other parts of the surface of the body, but the history of the case will seldom permit us to look upon the case as being one of this description. Indeed, it has been doubted whether the specific variolous pustule is ever formed on the surface of the body, by observers who have had so much experience in small-pox as Dr. Gregory and Mr. Marson, who say that the phlyctenula or pustule that is found to arise in the consecutive stages of variola, are identical with those which arise in common catarrhal or scrofulo-catarrhal conjunctivitis (see Wharton Jones's second edition, page 163). However, I have seen several cases in which a pustule or ulcer was formed upon the conjunctiva or cornea, ultimately affecting both structures at the same time with variolous pustules on other parts of the face and body. In such cases the pustule has been much more rapidly destructive in its effects than where it has occurred in the succeeding stages of the small-pox, and has in fact produced the same changes, leading to mortification of the subjacent parts, as the variolous pustule does upon the cutis. There seems to be no reason why the specific pustule should not occur as well upon the conjunctiva, which possesses a combination of characters of the skin and mucous membrane, as upon the skin of contiguous and continuous structures. The last of the cases given above seems to confirm this view, for one eye had been lost by a destructive affection of the cornea, which had occurred contemporaneously with the pustules on the body; the other eye being only secondarily affected with an inflammation which was much milder in character than the disease which had caused mortification of the cornea in the first eye. Nothing seems more probable than that in this case we had an exemplification of the two kinds of variolous affections of the cornea; in the one the specific pustule leading to destruction of the part implicated; in the other, the milder form of sympathetic secondary corneitis having its origin in a predisposition, caused by the disease having taken effect upon the constitution. At the same time, the fact of only one case in six reported having the appearance of being an instance of specific variolous pustule of the eye, indicates that such a case must be rather rare.

With regard to the period after the accession of an attack of variola, at which the secondary affection, which ushers in corneitis and ulcer of the cornea, comes on, it seems to be subject to considerable variations. Some authors say that it is about the eleventh or twelfth day from the first appearance of the eruption, and when the secondary fever has commenced, (see W. Jones, second edition, page 162); but in the six cases above noted the time varied from the tenth to the twenty-second day after the appearance of the eruption, and the average was eighteen days, so that when this affection occurs secondarily, in most cases probably it is on account of not so much the secondary fever, as of the dyscrasia produced by the disease.

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Original Communications.

ON THE TREATMENT OF CONTRACTED JOINTS.

By Holmes Coote, F.R.C.S., Assistant-Surgeon to St. Bartholomew's Hospital, and to the Royal Orthopædic Hospital.

[*Read before the Royal Medical and Chirurgical Society, May 11th*, 1858.]

I beg to call the attention of the Society to the Treatment of Contracted Joints; and, in so doing, I shall limit my remarks to the knee, although the principle of treatment must be the same in every articulation of the body. But, in the first place, I must assume the following propositions as granted.

1. Diseases of joints, whether acute or chronic, may be almost invariably referred to that state of constitution called struma in the young, and to rheumatism or gout in the adult.

2. The progress of the disease is always painful and tedious, but no morbid changes occur in any of the tissues by their nature irreparable. The synovial membrane may be thickened, but that is the first stage leading to its absorption; the articular cartilage may be removed, but the extremities of the bones become covered with other tissues; ligaments, softened and elongated, will in course of time become firm, and will even recontract, if put under proper and favourable conditions.

3. The severer changes with which we meet in practice are mainly due to want of proper maintenance of repose of the joint during the course of the disease. Where do we notice instances of inflammation of the cancellous texture of the bone leading to abscess? At the lower extremity of the femur, at the upper and the lower extremities of the tibia, but not in the bones of the upper extremity. These accidents happen, then, just to those bones which support the weight of the body.

and which have that weight thrown upon them when unfit to bear it.

4. If we except malignant disease—*i. e*, the different varieties of cancer—there is no disease which does not run through its course to cure.

5. Inasmuch as articulating surfaces are, with scarcely an exception, pressed firmly together in the extended position, and held loosely together when the limb is bent, in consequence of the direction and attachments of ligaments and fibrous bands, it follows that a joint, when diseased, is thrown into the flexed position by the patient, as being the easiest possible position.

6. That position may, after a time, become permanent, in consequence of the contraction of tendons, the formation of adhesions, or some displacement of the bones.

7. No attempt at extension and readjustment of the bones of a diseased joint should be attempted, until all active disease is passed, and the patient is free from pain.

8. Whatever may be the course adopted, it is necessary to preserve the continuity of the surrounding tendons, that the extended limb may be under the control and direction of the patient.

I do not hesitate to avow my belief that, in the treatment of diseased joints, there has not hitherto been shown, generally speaking, sufficient patience on the part of the surgeon, combined with the strict maintenance of rest and proper support of the affected limb. An idea has prevailed that certain morbid changes demand amputation; and this measure has been adopted upon very insufficient evidence as regards the incurability of the affection. Less patience and pathological research still has been shown by those most enthusiastic in the cause of excision of the articular extremities of bones; and it is with a feeling akin to horror that I read of the performance of the operation upon infants of six years of age. Out of thirty recorded cases of excision of the knee-joint, seventeen of the patients were between six and sixteen years of age—in fact, just at that period of life when best able to surmount the exhausting influence of disease.

At the risk of being accused of insisting upon that which is generally acknowledged, but which, I must add, if acknowledged, is not acted upon, I will briefly relate some cases to illustrate the progress of three forms of disease; namely—

I. *Common strumous enlargement.*
II. *Light brown pulpy degeneration of the synovial membrane.*
III. *Rheumatic inflammation.*

The cases which I will select will show not only how readily the process of repair goes on, if nothing is done to disturb its course, but likewise the frequent haste with which a joint is condemned; for, in nearly every case to which I shall allude, some severe operation had been recommended.

The Fellows of this Society will, I am sure, appreciate my motive in withholding names in the histories of the cases, and will accept my guarantee that I state that which is supported by proper evidence.

I. *Strumous Disease.* I was requested on February 28th to give my opinion, in consultation, upon the following case. A little girl, aged 7, had suffered for two years from strumous enlargement of the right knee. The leg was drawn backwards into the ham, and rotated outwards by the action of the biceps; the limb was semiflex. Attempts at the extension of the joint by force had been tried, and had failed, although the hamstring tendons had been divided. The knee was hot and swollen. It was urged that, inasmuch as the tibia was displaced from the lower extremity of the femur, the limb could no longer be of use; and amputation was proposed. Upon my dissenting from such a course, the case was put into my hands. I bandaged the limb from the toes upwards, and applied to the popliteal space one of the padded splints now before you, bent to suit the angle of the knee. A poultice was put upon the joint, until the heat had passed away; and then gentle pressure was kept up by means of the splint; and the knee is becoming daily straighter. I have no hesitation in saying that, in the course of a few years, there will be no trace (with proper precautions) of the present disease; but that a few weeks will suffice to enable the patient to leave her bed and walk with a stick.

Now, one of the surgeons who examined the case doubted the possibility of the replacement of the bones, and the future usefulness of the limb; and he accordingly accompanied me to a ward in St. Bartholomew's Hospital, where he saw the following case.

Mary Anne H., aged 22, sprained her left knee when quite a child, in Galway. The limb swelled and became painful; and the surgeon who attended her advised amputation. The parents would not consent, and ultimately she was able to creep about. For sixteen years she has walked upon crutches.

She was admitted under my care December 18th, 1857. The tibia and fibula of the left leg were rotated outwards, and drawn backwards, the leg being semiflexed, into the popliteal space. The lower end of the femur projected, supporting the patella: these were the remains of a fistulous passage quite healed. The toes were rather more than six inches from the ground. I divided the tendons of the biceps; and, having kept the divided ends in apposition for five days, I applied moderate extension by means of a weight (seven pounds) attached through a pulley to the foot. Immediate pressure to the displaced bone was made by splints.

February 24th. She walked, without crutches or other aid, from the ward; the foot having been brought four inches and a quarter nearer the ground. The bones of the leg had been partially brought under the femur; and she had a shoe with a high sole. Had I had at disposal such means as are to be obtained in private practice, I could have obtained a full half-inch more of length.

II. *Pulpy Thickening of the Synovial Membrane.* In this form of disease, the synovial membrane becomes converted into a thick, soft, light brown coloured mass. The microscope shows that it consists of a multitude of granular corpuscles, which are acted upon by the absorbents; for the same materials are found in the neighbouring absorbent glands. The disease has been so well described by Sir B. Brodie, and is of so frequent occurrence, that no further description from me is necessary.

In opposition to the opinion of some of the most respected of my professional brethren, I am positive that this disease is not incurable. It constitutes a stage in articular disease, of which the changes are, absorption of the synovial membrane; absorption of cartilage; fibrous union between the denuded bones. In the summer of 1854, a young woman was in St. Bartholomew's Hospital, under my care, with this condition of the synovial membrane in the right knee. No operation was ever seriously contemplated; but she would not listen even to an approach to the question. In the course of a few weeks, the pain and swelling subsided, and she quitted the Hospital. I have seen her often since that time, and, with care, she manages to get about very fairly.

Now, what does pathological investigation show? In 1846, I examined a knee-joint amputated for this affection of the synvovial membrane. The synovial membrane was thickened, softened, and discoloured, and overlapped the articular cartilage, which was loosened from the subjacent bone. The bone was vascular, but otherwise healthy. In 1850, I examined a knee-joint in an amputated limb, with the following result. The knee-joint was divided into three compartments, in consequence of adhesions between the remains of the synovial membranes: one between the outer condyle of the femur and the corresponding surface of the tibia; another between the inner condyle of the femur and the corresponding surface of the tibia; the third between the patella and the outer condyle of the femur. The cartilages were removed by absorption. Now, this joint had not been kept quiet during the active stage of the disease. The surfaces of the bones were rough and grooved, and locked into one another, the groove corresponding with the line of movement. The bone had also in parts inflamed, and become necrosed. In 1848, I examined a knee-joint, also removed by amputation for pain of the part, in which it was found that the tibia, fibula, and femur, were quite healthy, and united by fibrous membrane, the synovial membrane and the cartilage having been absorbed.

I believe that, in both forms of disease to which I have alluded, the changes consist in the gradual removal of the proper tissues of a joint, and of the union of the denuded bones by fibrous tissue. Bony anchylosis is of the rarest possible occurrence.

The idea of incurability should be dismissed; neither amputation nor resection should be thought of. The limb should be kept quiet until the morbid changes have come to an end; and then the contracted limb should be slowly extended.

III. *Rheumatic Disease.* Rheumatic disease is either acute or chronic, and the former is often very severe; but I doubt in the frequency of well managed cases requiring amputation. Last September, a young man, a sailor, was admitted into St. Bartholomew's Hospital, with acute rheumatic inflammation of the left hip. So severe were his sufferings, that I am sure

amputation would have been recommended, had the knee-joint been the seat of the disease. The cartilages were absorbed, and the head of the femur ulcerated, so that the limb was shortened and everted. But, after a time, the pain subsided, and the limb was brought down; and he quitted the hospital—on a crutch, it is true; but experience shows us that ultimately he will be able to bear upon the limb.

A young girl is at the present moment under the care of my colleague Mr. Tamplin, at the Royal Orthopædic Hospital. She suffered in 1853 from acute rheumatic inflammation of the right knee. Amputation was at one time thought of by the surgeons who attended her, so severely did she suffer. She was admitted September 4th, 1857. The leg was firmly semi-flexed on the thigh, but all pain and swelling had subsided. A proper instrument was applied.

January 4th, 1858. The leg is so much straighter that she can support herself upon the toe.

February 22nd. The limb is still under treatment. She can put her foot to the ground.

After rheumatic disease, bony anchylosis is not so very uncommon. There is a wide difference in this respect between the consequence of rheumatism and of struma. More force is, therefore, frequently required in the extension of contracted limbs from rheumatic disease; and such a proceeding may even be unadvisable in some situations, such as the carpus. A young woman is now under Mr. Lawrence's care, in St. Bartholomew's Hospital, who, after one attack of rheumatic fever, suffered from contraction of all her joints. The bones of the left wrist appear united by bony anchylosis.

There are three methods by which we may extend a contracted joint.

The first, namely, that adopted by Louvrier and Dieffenbach, I will briefly notice, as utterly unfit to be practised, owing to the dangerous, violent, and unscientific nature of the proceedings. The bands of adhesion, contracted tendons, and all resisting structures, were forcibly torn asunder; the limb, once straightened, was held so mechanically until the tendency to contraction was overcome. So serious were the results (and some cases ended fatally), that the scheme was soon abandoned, and is now rarely resorted to, except by some surgeons in exceptional cases of impaired movement of the elbow after injury. It is a proceeding I cannot recommend.

The second consists in the subcutaneous division of tendons, followed, at an interval of seven days, by the forcible rupture of adhesions. The limb is then put up in the flexed position, and, after six or seven days, the soft uniting material is slowly elongated by a proper apparatus. This plan is recommended in some cases by Mr. Brodhurst. (*Medico-Chirurgical Transactions*, vol. xl.)

The third consists in the slow elongation of the contracted tendons and uniting bands, without forcible rupture, but with or without the subcutaneous division of tendons. This plan is the one usually adopted at the Orthopædic Hospital, and is recommended by Mr. Tamplin. As plan No. 2 has been already well described in the *Transactions* of this Society, I shall confine my remarks to the third plan.

But, before mentioning some cases by which the particulars of the proceeding may be illustrated, I would call attention to a course which unhappily combines the evil of the first and second plan, without any of the attendant advantages. Some surgeons have first subcutaneously divided the tendons; next they have immediately extended the joint by force, the patient being under the influence of chloroform; thirdly, they have put the extended limb into an immovable apparatus, as if they were dealing with unorganised parts. One moment's reflection would show that, independently of the uncertain amount of injury inflicted, by which dormant disease may be roused into activity, the ends of the divided tendons are widely torn asunder, and cannot be expected to reunite so as to afford the proper support to the joint; while such fibrous bands as, by their position, admit of reunion, will again be liable to re-contract, inasmuch as the newly deposited material has all the properties of a cicatrix.

That which is wanted is extension—not laceration; and, if we divide a tendon, we carefully keep the divided ends in apposition, until a new and yielding substance has been effused between them. This was first pointed out by Delpech.

Fibrous adhesions admit of great elongation under slowly applied pressure; and such pressure causes the absorption of the contracted element, so that the elongation is permanent.

The careful examination of a contracted joint is necessary, in order that we may form a just prognosis, and determine upon the exact nature of the apparatus and method of treatment to be adopted. In the first place, we must ascertain whether there is motion, and, if so, what is the amount; in the next place, the nature of the obstruction, or the cause of resistance; thirdly, we must ascertain whether the patient possesses any voluntary power over the limb.

"After these preliminary inquiries," remarks Mr. Tamplin, "let an assistant hold the thigh firmly, while you attempt to extend the leg forcibly. If you are able to extend it in the slightest degree, and the patient complains of pain on the anterior surface of the joint, however slight the motion obtained in this way may be, your prognosis will be favourable; and, even in those cases where there is no perceptible motion, if the patient complains of pain in the situation mentioned, you may anticipate the possibility of removing the contraction. It is also as well to examine the patella, and ascertain whether it admits of motion in a lateral direction." (*On Deformities*, p. 159.) The character of the motion is then to be ascertained. "If it is a steady motion, and if, upon an increase of extension, the flexor tendons are rendered more tense, you will regard the resistance as confined to the muscles principally; if, on the other hand, you find, upon keeping up the extension for some seconds, that the joint returns to the contracted position with an elastic impulse, you may anticipate resistance arising from adhesions in the joint itself. If you find free motion beyond the contracted or flexed position—that is, if you are enabled to increase the amount of flexion without difficulty, with as much ease as can be done ordinarily—this will be a favourable circumstance." (*Op. cit.*)

But if a joint be immovable, and occasions no pain upon examination, and if, upon continuing extension, the muscles relax themselves, it is hopeless to attempt restoration by ordinary methods.

The instruments here exhibited have been constructed by Mr. Ferguson of Giltspur Street, and are well worth an attentive examination. It will be observed that, in place of the old male and female screw at the back of the splint, there are screws at the side which may be so arranged as to give not only the movement of flexion and extension, but likewise abduction, adduction, and rotation. Thus the leg drawn backwards into the ham, rotated outwards, and bent, may be slowly extended, may be rotated inwards, and pushed forwards under the extremity of the femur, pressure upon any sensitive spot being relieved by some combination of action.

The apparatus is very commonly adapted to a boot by which the proper position of the foot is maintained. Provision is made for flexion and extension of the ankle.

The use of this instrument requires care and constant supervision. The great secret, whether any tendons be divided or not, consists in the gradual and painless, yet steady and unremitting application of the extending force.

The following cases have been selected out of many to illustrate its use.

Emma R., aged 8, fell on the left knee three years ago at Cheltenham, and, as she says, put her kneecap out.

A year ago she attended the Royal Orthopædic Hospital as out-patient under Mr. Tamplin. The knee was at this time very much contracted. It was treated upon the principles laid down by the late Mr. Scott, and the patient could walk about with a stick. By this treatment some improvement was obtained.

September 6, 1857. She was admitted into the Orthopædic Hospital. The limb was still much contracted and swollen, but not painful. The usual instrument was applied.

February 26. The knee is of natural size; the leg is almost straight upon the thigh.

Fanny T., aged 15, a delicate girl, had for the last six years suffered from inflammation of the lungs. Three years ago she experienced weakness in the right knee, accompanied with cramps; she became a patient in the Northampton Infirmary, where she was treated, and subsequently discharged. The pain still continued, though diminished, and the leg at right angles to the thigh.

February 15. She was admitted into the Royal Orthopædic Hospital, under Mr. Adams, when the usual instrument was applied.

February 28. The leg is nearly straight; the joint is free from pain.

I have selected these cases out of many, as showing what may be done with common precaution and care; and when I am met with that most unworthy of all arguments—that such a practice is all very well for the rich, but does not answer with the poor, who cannot spare either time or attention, I reply, that to the poor especially is the preservation of a limb

of paramount importance. Those who thus speak, seem not to know how many months, and sometimes years elapse before an artificial limb can be worn with comfort; how many means of obtaining subsistence are debarred from one so mutilated; I uphold that any length of time is well spent, which gives the patient the chance of escaping this dreadful alternative, from which, as Mr. Hussey of Oxford has shown, not only do many die, but many more never thoroughly recover.

I will conclude by describing the way in which the hamstring tendons are divided and treated, when this proceeding becomes necessary in combination with the above.

Let the patient lie horizontally on his face; an assistant grasps and extends the leg. A small sharp-pointed knife is passed to the inner side of the tendon and beneath it horizontally. As soon as it is fairly under the tendon, turn the sharp edge upwards, and divide from within outwards, *i. e.*, from the popliteal space to the skin. The biceps flexor cruris is usually the most tense, but such is not always the case. Sometimes the outer hamstring tendon alone requires division; sometimes both outer and inner. In many cases after the division, the tendon's numerous tight bands spring up when the extension is kept up. Care must be taken not to wound the popliteal vessels and nerves, should interference with them be deemed necessary. Extension generally suffices. The operation being completed, pledgets of lint are put on the wound, and fixed there by adhesive plaster. The limb is supported by a bent turned splint, and rolled from the foot upwards. It is best to allow a week to pass before any attempt at extension is made, because by proceeding too quickly, the parts of puncture may be irritated, and the treatment delayed. The chief danger consists in the division of the peroneal nerve; and such an accident has happened. It occasions the patient considerable alarm, but in the course of time the divided nerve reunites, and sensation and motion are both restored.

INSANITY.

By John Watson, M.D., Southampton.

We are indebted to the advocates of phrenology for having of late years given an impetus to the study of insanity. It is a question, however, whether this science has not introduced some disadvantages; among which may be placed the attempts that have been made to distribute the different manifestations of this affection to different portions of the brain, in accordance with their supposed subserviency to the different groups of mental faculties; and thus further to complicate a sufficiently difficult subject. I propose in this paper (1) to adduce reasons for rejecting the view first promulgated, I believe, by the late Dr. Prichard, and adopted, under the same or some equivalent name, by most recent writers both at home and abroad—that we can have what is called moral insanity, while the intellectual powers remain unaffected; and (2) to view the entire question from a different stand-point.

1. That insanity can be anything else than an aberration of a man's intellect is a startling proposition. It would be quite as reasonable to separate such cases as exhibit sensory illusions into a distinct class under the head of sensational insanity (thus mistaking an accidental condition for the essential disease), as it is to affix the term moral insanity to those cases which exhibit particular excitement or perversion of the moral sentiments. In a proper, restricted sense, indeed, terms expressive of the cause or course of insanity are in common use, such as religious, homicidal, suicidal, puerperal, etc.; but these are merely qualifying expressions, and are not used in contradistinction to insanity of the intellect. And, in the same way, the term moral insanity, meaning the moral causes or moral consequences of insanity, would be unobjectionable. Etymologically, this phrase means either *unsoundness of morals*, which is vice, or *insane conduct*, which is simply an inseparable accompaniment of insanity, and reveals it. But, beyond the objection there is to the phrase itself, the doctrine it represents will not, I think, bear investigation. It is meant that the sentiments, the emotions, as distinguished from the intellect, are *insane*. Emotion, I submit, may be designated as warm, enthusiastic, cold, depressed, perverted, or non-existent; it may be in excess or deficiency; but to call it insane is meaningless, and, if ever conventionally allowable, cannot be permitted in scientific language. In examining the various sources whence human actions spring, we shall find them reducible to either an instinctive *impulse* or a *motive;* the first being a motion of the organism, and the last a conception of the understanding. To which class does moral insanity belong? If to the former, then it is the province of a sound intellect to restrain its irregular instincts and emotions; but if to the latter, then we have insanity, properly so called. But, again, the distinct line that exists in the mind between the operations of the understanding, and the sentiments or emotions, is entirely overlooked by the advocates of this doctrine. Our moral nature is said to consist wholly in these sentiments or emotions; thus forgetting the fact that a moral judgment invariably precedes a moral sentiment, and that they stand to each other in the relation of cause and effect. A little reflection will make this apparent. The sentiments of reverence and gratitude towards God *follow* a rational conception of his being and attributes; remorse, the judgment that we have acted basely; pity, the conception of suffering; indignation, that of injustice; and so on. "The perception", says Royer-Collard, "of the moral qualities of human actions is accompanied by an emotion of the soul that is called *sentiment*. It is a fact that, by the contemplation of a beautiful action or a noble character, at the same time that we perceive those qualities of the action and the character (perception, which is a judgment), we feel for a person a love mingled with respect, and sometimes an admiration that is full of tenderness. A bad action, a loose and perfidious character, excite a contrary perception and sentiment." (Cousin's *Lectures*, by Wight: The True, the Beautiful, and the Good. Lect. 13.)

These considerations point to the conclusion that no real distinction exists between intellectual and moral insanity, and that moral insanity necessarily implies intellectual misconception.

2. Reverting to the general question of insanity, and bearing in mind that any lengthened metaphysical details are unsuited to the pages of a strictly medical journal, I will now attempt to draw an outline of the subject, merely stating results which I assume (if need were) could be fully established.

The world of mind is revealed to each individual in his own consciousness, and an attentive examination of what passes therein will satisfy us that all its phenomena may be grouped, as is ordinarily done, under the three heads—1. Operations of the understanding; 2. Feelings; and 3. Voluntary power. A still more careful examination enables us to divide the operations of the *understanding* into two great classes—1. Intuition or spontaneity; and 2. Reflection, or the logical faculties. In its intuitional activity, the reason acts by insight, seeing "the truth as the eye does light, only by being directed toward it." (Locke's *Essay*, bk. iv, ch. 2.) Hence do we derive all universal necessary truths, and the first principles of all knowledge. (See Reid, Sir William Hamilton, and Cousin.) In its reflective activity, reason acts by reasoning (observation, deduction, and induction); and hence do we derive all relational knowledge, and the arts and sciences. The feelings also are divisible into—1. Sentiments or emotions; and 2. Sensations. Sentiment is defined as *a sensible response excited by a conception of the understanding*. Sensation, on the other hand, is excited by or through a bodily organ, and may be either an instinct or the action of one of the special senses. The will is the free power we possess of determining inward or outward activity.

As giving distinctness to what has just been written, I may be allowed to reproduce it thus:—

CONSCIOUSNESS.

1. *Understanding:*
   - *a.* Intuitional, or Spontaneity—Reason acting by Insight. Necessary truths: the Infinite: the Good: the Beautiful.
   - *b.* Logical, or Reflection—Reason acting by Reasoning. The relations of things.
2. *Feeling:*
   - *a.* Sentiment or Emotion: Love, Faith, Hope, Joy, Aspiration, Sorrow, Remorse, Awe, Veneration, etc.
   - *b.* Sensation—Instinct: The Special Senses.
3. *Will:* The Principle of Personality: a free Power of determining inward or outward actions.

Which of these classes of faculties is it, whose disorder that constitutes the essence of insanity? We exclude the *feelings*, because, as we have seen, they are instinctive tendencies which are susceptible only of differences in intensity, and insanity does not consist of intensified or destroyed feeling; and because this part of our nature is placed under the control of a will directed by a sound understanding. We exclude the *will*, because perversion of this principle constitutes, not a physical disease, but that moral disorder with which spiritualists and moralists, or legislators, alone have to do; and

we exclude that insight of the understanding which is called intuition, because it is a part of its own innate energy which depends neither on memory nor the senses, though called into activity through their exercise. There can be no difficulty, then, in admitting that the disease under consideration exists in the only other set of faculties remaining; that its *exciting cause* is disease of the material organ in which they inhere; and that its *proximate cause* is a perversion of the logical understanding, and through it a perversion also of the feelings and the will. Insanity, then, may be defined as—a dangerous misconception of one's personal relations, either persistent or with lucid intervals, and with or without illusions of the senses.

It will give more completeness to this sketch if I add, that a true conception of the understanding is an idea or belief in conformity with the nature of things, and that the class of misconceptions may be tabulated as under:—

MISCONCEPTION.

1. In matters common to all men: *Error* and *Ignorance*.
2. Peculiarities gradually acquired from circumstances: *Eccentricity*.
3. Peculiarities suddenly or recently coming on from disease: some forms of *Monomania*.
4. In which liberty is dangerous to the Individual and to Society: *Insanity*.
   - *a*. From destruction of all mental power—Dementia.
   - *b*. From general weakness of mental power; viz., inadequate conceptions, blunted emotions, and feeble will—Amentia.
   - *c*. Strongly exciting or perverting the instincts, emotions, and will—Mania, Monomania, Dipsomania, Impulsive Madness.
   - *d*. Depressing the instincts, emotions, and will—Melancholia.

TREATMENT OF DIABETES MELLITUS.

By T. Inman, M.D., Liverpool.

It is desirable that contributions, however small, should be made from time to time respecting any new plan of treatment proposed for severe and almost intractable diseases. As yet we have had few reports upon the practice adopted by Dr. Budd, of Bristol, in diabetic cases, although it was one eminently deserving of consideration.

I have, in my hospital experience, had four cases of diabetes mellitus under my care; two prior to the publication of Dr. Claude Bernard's researches, and the promulgation of Dr. Budd's views; and two since. Of the first two, I will only say that the patients went out of the hospital worse than when they came in, although no attempt was spared to benefit them.

The last two cases came to very different conclusions. I may, for the sake of brevity, describe both patients as being labouring men, about 40 years of age—ill for many months. The quantity of urine passed was over twenty pints daily, the specific gravity 1,045; the presence of sugar was ascertained by fermentation and other tests. Emaciation was considerable; and thirst great. Both had been under dispensary treatment before their admission. In adopting a plan of treatment I was guided by the following considerations:

1. The liver naturally produces sugar in a definite quantity. In diabetes there is an excess of sugar, and we may fairly infer that it comes from the liver. Opium has a decided effect in diminishing the bile producing or secreting function of the liver, and it is reasonable to suppose that it will reduce the sugar-forming function. Experience has long told us that no single remedy in diabetes has been so efficacious in diminishing the quantity, etc., of urine passed, as opium. Opium, therefore, should be one ingredient in the treatment.

2. Again, Bernard has shown that the liver makes sugar, no matter what is the nature of the food employed. Dr. Budd has shown that some patients, at least, may be benefited by saccharine food. But my patients did not long for sugar; and they did enjoy their ordinary food; consequently I neither restricted them to non-saccharine, or non-amylaceous diet, or prescribed unusual quantities of sugar. They were to have the ordinary full diet of the hospital, but more in quantity if they chose, either of bread, meat, or potatoes.

3. Again, it seemed to be clear that in diabetes, there was debility, implicating more or less the whole system; that there was danger of death by consumption; that the digestive powers, notwithstanding their apparent energy, must be impaired; at any rate, that opium was liable to disorder the stomach, and that it could be tolerated in larger quantity if combined with quinine.

The result of these considerations was the following prescription for a pill:

Opium, one grain; quinine, two grains; to be taken every four hours. Full house diet, with porter daily.

The effect of this was soon appa ent. The men began to improve rapidly and steadily; the urine diminished until it stood at ten pints only per day, with a specific gravity of 1,035. Commensurately with this, their strength and spirits increased, and they gained in flesh considerably. The opium never affected the head except on one occasion, when the patient, hoping to expedite his recovery, took a double dose. The bowels were habitually regular. The plan of treatment was neither varied or altered during their residence in the hospital. They remained under notice, the one about three months, the other for six weeks. Both left the house of their own accord, as they considered themselves sufficiently cured, and competent to do their ordinary work. I have seen one since he went out, and found that he continued strong, and, as he thought, well.

Of course I do not imagine that these two cases are sufficient to upset our older notions of the correct treatment of diabetes. I merely offer them as a small contribution to our general therapeutical stores.

I may just mention, as a curious fact, that one of my unsuccessful cases found that he received more benefit from a diet of raw beef than from any other thing dietetic or medicinal which he had taken; and that every new medicine did him good for about two days.

REMOVAL OF AN INVERTED UTERUS.

By J. Bower Harrison, M.D., Higher Broughton, Manchester.

In the *Medical Gazette* for April 1840, I published a case of the successful removal of an inverted uterus. At the period at which the case was published, only a comparatively short time had elapsed since the performance of the operation. It may be interesting, therefore, to supply, at the present time, such particulars as I am able to collect respecting the final success of the case.

I am more especially induced to offer these particulars, as the case itself seems to have escaped the notice of many who have directed their attention to this subject. In a paper, for example, which appeared in the *Medico-Chirurgical Transactions* for 1852, on the Inversion of the Uterus, by Dr. Gregory Forbes, no allusion is made to my case, although the paper professes to contain a complete record of what has been published in relation to this disease. I must acknowledge, however, that Dr. Forbes afterwards did me the favour to write me a letter in which he regretted the omission, and expressed his wish to supply the defect by a supplementary notice.

Some time subsequent to the operation, which I related in the *Medical Gazette*, my patient left Manchester, and I unfortunately lost sight of her. This I regretted, though I had every reason to suppose that she was in good health, for my friend Mr. Crosse of Norwich wrote to me in July 1844, expressing a wish to have full particulars of the case. He says, "I have for some time been attending to the subject of *inversio uteri* (having had a successful case of removal of that organ), with a view to writing a comprehensive essay thereon. By some great oversight, I was not cognisant of your excellent case detailed in the *London Medical Gazette* of April 1840. I hope you will excuse me for putting to you the subjoined queries, in further illustration of your case," etc.* Mr. Crosse happily discovered the patient himself, for, in December of the same year, he writes me word, "I do not think I have before informed you that my particular friend Mr. Samuel Smith, Senior Surgeon to the Leeds Infirmary, has found your extra-uterine patient, and sent me full particulars about her present state. She *continues in good health*, as do several others in this country whom I have seen. The gradual method you pursued, in removing the uterus by ligature, coincides precisely with my own ideas as to the best way to do it with success."

In a letter which Mr. Crosse wrote to me in June 1845, he says, "I was lately at Leeds, and saw your extra-uterine

* The original letters are in my possession.

patient, who was quite well. Dr. Radford sent me a drawing of the uterus you removed—a very interesting drawing; but, if I publish it, the last part of my essay, the treatment by excision of the organ, will be the place: therefore, no allusion to your case has yet been made admitting of the drawing." It seems that my patient did not continue to reside in Leeds; for, in answer to an inquiry which I made respecting her, the other day, Mr. Smith, of Park Lane in that town, kindly wrote to me, "I have by accident seen the person with whom your patient lodged when in Leeds, and found that she has removed to Huddersfield; and the address is, Mr. John Morris (her husband), Ginger-Beer Manufacturer, Zetland Street, near King Street, Huddersfield. Your patient is living, *and in good health*. I remain, my dear sir, yours truly, Samuel Smith."

This last letter, therefore, brings the information up to the present period—a space of upwards of eighteen years after the performance of the operation; and establishes without doubt the claim of this case to being ranked among the successful instances of removal of inverted uterus.

CASES ILLUSTRATING DISEASES ARISING FROM LONG CONTINUED RESIDENCE IN INDIA.

By William Henry Ashley, M.D.Edin., F.R.C.S.Eng., Honorary Surgeon to the Kensington Dispensary.

All our experience and knowledge of the processes and phenomena of disease begins with individual cases; and the truth is brought nearer to our comprehension by collecting numerous examples under the greatest possible variety of circumstances. This can only be accomplished by the combined exertions of numerous observers. We are thus enabled to distinguish what has uniformly occurred in all cases, conjointly or consecutively, and what has not transpired, and finally to determine constant coincidences from those which are merely fortuitous.

Case I. *Atrophied Granular Induration of the Liver.* The subject of this case was a lady aged 56, of regular and very temperate habits, whose constitution had been enfeebled by residing many years in Calcutta, and who had lately returned to England in an impaired state of health, having suffered occasionally from disorder of the digestive organs. Towards the termination of 1854, a marked declension in the state of her health became apparent; and when she placed herself under my care in January 1855, she was complaining of indigestion, abdominal pulsation, emaciation, debility, insomnia, and depression of spirits.

February 1, 1855. The face and body were generally pale; she had loss of appetite, considerable feebleness, severe and almost persistent epigastric pulsations, synchronous with the heart's action, no sense of weight or pain in the region of the liver; the entire abdomen was unaffected by strong pressure; the tongue was clean; the pulse feeble and somewhat irritable, 95; the skin dry; the urine high coloured; the stools natural and costive. No cardiac or pulmonic disease, or enlargement of the spleen, could be detected.

The progress of the affection was slow but continuous; from the commencement of March, the symptoms became more severe, and on the 11th of that month, jaundice supervened, and remained persistent until her death, which occurred on the 1st of October following. Simultaneous changes were now observed; the urine appeared charged with bile, and the alvine dejections were no longer tinged with dark matter, but became light and clay coloured. The new formation of connective tissue could now be readily distinguished by tactile examination through the exceedingly attenuated parietes of the abdomen, in the form of callosities, indicating a state of degeneration into granular atrophied induration of the liver; but the development of this callous tissue did not become apparent to the touch before the supervention of the jaundice. The symptoms resulting from the impermeability and obliteration of the secreting tissue, bore a certain progressive ratio to the degree of hepatic induration, and were chiefly characterised by tabes, anæmia, and (shortly before death) by ascites. Concurrently with the development of these symptoms, might be observed a dark yellow greenish tint of the skin pervading the whole body; the icteric urine was of such intensity of colour, as to assume a blackish or inky hue, and the biliphæin in solution, tinged linen of a dark yellow dye. The usual tests failed to discover any trace of albumen. Towards the termination of the disease the symptoms became more complex and aggravated. There were occasional paroxysms of severe pain in the liver, a constant bitter taste in the mouth, and almost daily, at an early hour in the morning, vomiting of bilious matter, occasionally complicated with hæmatemesis. The pulse now became very irritable, often exceeding 130 beats in the minute, and petechiæ appeared on the superior and inferior extremities. The extinction of vitality was very protracted, and accompanied by the manifestation of exalted reflex actions, the functions of the sensorium remaining unaffected until two days before death.

Remarks. In the early stage of the malady, the dyspepsia was relieved by bismuth, soda, henbane, and prussic acid; and due action was maintained on the chylopoietic viscera by the use of mild mercurial and aloetic medicines. After the supervention of jaundice, the mineral acids, and various preparations of quinine and iodine were administered; and the nitro-muriatic acid bath was persevered in for a lengthened period. The acids were employed with a view of acting on the absorbent and excretory systems, and arresting the hepatic degeneration; at the same time, that they might also serve to oxygenise the vitiated blood.

The setting in of this insidious and dangerous affection was marked by dyspeptic symptoms of a very intractable nature, together with considerable marasmus. At this early period of the disease, there existed no abdominal pain; but the comparative benignness of the symptoms was of short duration, and the development of hepatic disease soon became patent and determinable. It is a remarkable circumstance that the system should have been surcharged with bile for a period of eight months, and that, in spite of the protracted duration, there was an entire absence of coma or any cerebral complication, until forty-eight hours before death. In accordance with that vicarious but conservative law of nature, observed sometimes in diseased conditions of the system, the kidneys became the excreting emunctories of bile-pigment, and to a certain extent compensated for the loss of vital power in the peccant organ.

In this instance we have an exemplification of the system tolerating the presence of a noxious agent with impunity for an unusually long period. Cholæmia in this respect differs from uræmia; the concomitant circumstances and influences are too complicated, and the importance and office of each individual agency are not sufficiently known to enable hæmatologists to determine the causes of this divergence and variation in the symptoms. Perhaps the fact of urea containing more nitrogen than any other animal product, may serve in some measure to explain its pernicious effects; how frequently is cephalœa attributed to derangement of the liver, when the cause may be found in functional disorder of the kidneys; the *materies morbi* depending on excess of uric acid in the blood, too often induced by sedentary habits and over stimulating food. Werner asserts that bile, added to fresh drawn blood, prevents its coagulation; and to its presence in the living body may be ascribed in some measure that condition of system frequently terminating in dyscrasial anæmia, marked as in the present case by the appearance of petechiæ on the surface of the body.

The obstruction and interruption to the flow of blood through the liver frequently induces disease of the heart, but in this instance there was no hypertrophy or valvular lesion. The peculiarly excited pulse was partly due to the constant effort of the heart to propel the blood through the indurated and almost impermeable hepatic tissue, to cardiac irritation set up by the presence of bile in the circulating fluid, and also to sympathetic reflex action induced by the formidable nature of the hepatic lesion.

To climatic influences we must in this instance ascribe the origin of this incurable form of disease. It is seldom the practitioner meets with an example, so complete and well defined in all its stages of progressive development, frequently one or more of the important symptoms are absent, but in this case all the salient points necessary for the purpose of accurate diagnosis, present themselves to our notice.

Case II. *Chronic Dysentery.* Mrs. B., aged 40, of spare habit, after a residence of many years in India, returned to England in July 1855. She first complained of dysenteric symptoms on board ship in the Bay of Bengal, March 1855; and the disease had now continued for twelve months without any intermission. During the last nine months, she had resided in Scotland; but finding the climate ungenial, and her disorder increasing in severity, she removed to London.

March 31st, 1856. Her symptoms were excessive emaciation and prostration of strength, dryness of skin, anxious countenance, sallow complexion, pulse 90, small and feeble.

Pain was always induced by food, and continued until the food had passed through the bowels. She had twelve loose stools on an average daily, occasionally as many as twenty, consisting of muco-purulent and sanguinolent jelly-like mucus, without feculent matter; at other times, of excrement, mingled with the former in a fluid state; defæcation was unaccompanied by griping or tenesmus. She had great tenderness of the abdomen, and pain on pressure. The tongue was coated with brownish deposit, and dry. The urine was normal. She was ordered to take acetate of lead, in combination with opium, three times a day.

April 8th. The alvine evacuations were now reduced to five or six daily, with less hæmorrhage; and the pain in the abdomen was not so severe.

April 22nd. The diarrhœa was less frequent, and the strength had increased. The sulphates of copper, iron, and quinine, in combination with opium and conium, were prescribed.

May 2nd. There was very marked improvement. The pulse was natural; the bowels acted twice daily; there was no hæmorrhage; and little tenderness of the abdomen. She was ordered to take dilute nitric acid, with infusion of simaruba and cod-liver oil.

May 12th. No hæmorrhage had occurred for some time; the bowels were costive; scarcely any tenderness of the abdomen remained. Extract of nux vomica, the occasional use of clysters, and olive oil as a laxative, were prescribed.

Since the healing of the ulcerated surface of the intestine, and consequent suspension of the liquid loss by stool, bronchial flux has supervened.

Remarks. The textural alterations must have extended to a large extent of surface, the purulent sanguinolent exudation indicating follicular affection with penetrating destruction of tissue. Long continued atonic inflammation and suppuration of the intestinal coats had produced a state of passive dilatation. The absence of tenesmus may be explained by the disease not having invaded the lower portion of the colon and rectum. Notwithstanding the duration of severe dysenteric symptoms for a period of twelve months, under the treatment adopted the patient recovered in six weeks.

The case is interesting as affording an illustration of bronchial flux supervening on the suppression of a long continued discharge from the ulcerated surface of the colon, the one flux becoming substituted for the other; as the patient was not exposed to the influence of cold, the bronchial attack was probably the result of determination of blood from the intestines to the lungs; hence the necessity of due caution in not arresting a long continued discharge too suddenly.

Another circumstance worthy of note was the declension of muscular power in the coats of the bowels, as marked by the severe constipation which followed the chronic inflammatory action and ulceration; to restore the tonicity of the fibre, and relieve exhaustion, extract of nux vomica, with nitro-muriatic acid and cod-liver oil, were prescribed.

Reviews and Notices.

Notes on the Surgery of the War in the Crimea; with Remarks on the Treatment of Gun-shot Wounds. By George H. B. Macleod, M.D., F.R.C.S., formerly Surgeon to the Civil Hospital at Smyrna, and to the General Hospital in Camp before Sebastopol; Lecturer on Military Surgery in Anderson's University, Glasgow, etc. pp. 439. London: Churchill. 1858.

It has ever been an honourable task to enrich surgery from the opportunities afforded by war; to turn the experience gained from these lamentable occurrences to the best account, so as, perchance, out of present misfortune, to devise future mitigation of suffering, and even the means of preserving life and limb. In the performance of this duty have laboured many, whose names stand forth in the first rank when one strives to muster in the mind the noble army of surgeons. Ambroise Paré, Larrey, Hennen, Dupuytren, Guthrie, Stromeyer—these, and others, are names "familiar in our mouths as household words". He who would be a companion of such men has no small task to perform to prove himself worthy of the honour. Yet it would be a pity that any should shrink back from a feeling of unworthiness. The opportunities of the military surgeon are so precious and yet so rare, as to require to be seized on at once; and if some diligent and modestly ambitious Æsculapian—such as the author of the work before us—does not earn for himself the full reputation of a Guthrie or a Larrey, he yet may have the gratification of reflecting that he has done his best, and of receiving the acknowledgments of his brethren, that they have derived advantage from his labours.

Dr. Macleod's work consists of twelve chapters and an appendix. The chapters treat of, I. History and Physical Characters, etc., of the Crimea: II. Drainage and other Hygienic Arrangements, and their Effects on the Health and Diseases of the Soldiers; Hospitals; Distribution of the Sick; Nursing; and Transport: III. The Campaign in Bulgaria, and its Effects on the Health of the Troops: IV. Distinction between Military and Civil Surgery; and some Peculiarities in the Wounds and Injuries seen during the late War: V. The "Peculiarities" of Gun-shot Wounds, and their General Treatment: VI. The Use of Chloroform in the Crimea; Primary and Secondary Hæmorrhage from Gun-shot Wounds; Tetanus; Gangrene; Erysipelas; Frost Bite: VII. Injuries of the Head: VIII. Wounds of the Face and Chest: IX. Gun-shot Wounds of the Abdomen and Bladder: X. Compound Fracture of the Extremities: XI. Gun-shot Wounds of Joints; Excision of Joints, etc.: XII. Amputation. The appendix consists of articles on (*a*) the Geology of the Crimea; (*b*) Thermometric Observations; (*c*) The Weight and Nutritive Value of the Soldier's Ration; (*d*) Return of Duty in the Crimea; (*e*) The Routine of Duty in Particular Regiments; (*f*) Table of Weight of Balls used by the Belligerents; (*g*) Tables shewing the Mortality following the greater Amputations for Gun-shot Wounds and Accidents; (*h*) *Resumé* of M. Scrive's Work on the French losses in the Crimea; (*i*) *Resumé* of the Report of the British Government on the Surgery of the War in the Crimea.

On these important subjects, Dr. Macleod has given much valuable information in a readable and instructive style. We make an extract or two from his expressions of opinion on some of the topics which have most recently engaged attention in reference to the treatment of the sick and wounded of an army.

Female Nurses. To the practicability and usefulness of employing female nurses in military hospitals, if conducted with discretion and caution, Dr. Macleod gives his entire adhesion.

"In military, more than in civil hospitals, is the kindly sympathy and gentle care of a woman required. The soldier has no crowd of anxious friends or relatives to visit his sick bed; but, oppressed by a sense of loneliness in a foreign land—a feeling of which he is little conscious when in health, but which comes upon him with overpowering weight when the silence of the sick room gives him time for reflection,—he clings to those gentle offices of kindness which a woman can alone bestow. To the surgeon a good nurse is of incalculable service. His medicines and splints cannot cure unless those many trivial and apparently insignificant points connected with the management of a sick bed, which are more than half the cure, are attended to. The surgeon has enough to occupy all his scant time in the greater and more serious duties of his service; while those nameless, constantly-recurring necessities of a sick room, none can minister to like a woman. To perform such duties aright seems part of a woman's mission on earth. The patience and gentleness which are such inestimable qualifications in a nurse, we cannot look for in a strong and vigorous man, nor yet that sensitive recognition of a sick man's wants which so distinguishes a woman. Charles Lamb well expresses this idea when he says, 'It is not medicine, it is not broth and coarse meats served up at stated hours with all the hard formality of a prison,—it is not the scanty dole of a bed to lie on, which dying man requires from his species. Looks, attentions, consolations, in a word, *sympathies* are what

a man most needs in this awful close of human sufferings. A kind look, a smile, a drop of cold water to a parched lip—for these things a man shall bless you in death.'

"A woman's services in an hospital are invaluable, if they were of no further use than to attend to the cooking and the linen departments, to supply 'extras' in the way of little comforts to the worst cases, to see that the medicines and wine ordered are administered at the appointed periods, and to prepare and provide suitable drinks. As to the employment of 'ladies,' I think they are altogether out of place in military hospitals, except as superintendents. As heads of departments, as organizers as overlookers, 'officers' of the female corps, if you will they cannot be dispensed with; but, for inferior posts, strong, active, respectable *paid* nurses, who have undergone a preliminary training in civil hospitals at home, should alone be employed. In the camp hospitals, which, with an army in the field, are merely the temporary resting-places of the sick, men should alone be employed as nurses; but in the more fixed hospitals in the rear, the lady superintendents and under nurses should in my opinion always be added to the regular staff." (pp. 50-3.)

Recruits. Dr. Macleod adds his testimony as to the unfitness of many of the recruits for 1855 for the hardships they had to encounter:

"The majority of the recruits who joined the army early in 1855, and who supplied many of the wounded of that year, were far from being well chosen. They were selected under a pressure, and were the contributions of a country where the drag-net of the conscription is not used to inclose the good as well as the bad, and where a soldier's life is not in any honour or favour with the generality of the people. Many of them were raw boys, ill-conditioned, below the standard age, undeveloped in body, unconfirmed in constitution, and hence without stamina or powers of endurance. Often selected on account of their precocious growth, at once launched into the turmoil, unwonted labour, and hardship of a siege, in which the strength of full-grown men soon failed, they were very quickly 'used up.' Cholera or fever speedily seized them, overtaxed as they were in work, and unaccustomed to either the food or the exposure which fell to them. The hospitals became filled with such unpromising patients, whose 'wizened' look of premature age was remarked by the most casual observer. If these unfortunate boys were severely wounded they almost invariably died, as their weakly constitutions and overstrained powers could not withstand 'the ordeal of recovery.' To them Hunter's saying applied with peculiar force, that 'their condition of health did not bear disease.' If they survived the first effects of their injury, their convalescence was painfully prolonged, and the least imprudence produced a relapse. Their ailments were seldom acute—their life-power was unequal to its production—their nervous systems were shattered, and that undefined but most fatal disease, known as the "mal des trenches," was soon set up. Depletory measures had soon to be abandoned, and a more rational treatment, founded on special symptoms and the observed effects of remedies, substituted for the conventional medication." (pp. 96-8.)

Conical Balls. "The greater precision in aim, the immensely increased range, the peculiar shape, great force, and unwonted motion imparted by the new rifles to their conical balls, have introduced into the prognosis of gun-shot wounds an element of the utmost importance. I am not prepared to say whether the great destruction of the soft and hard tissues which these balls occasion, results from their wedgelike shape, immense force and velocity, or the revolving motion, or from a combination of all these causes combined; but of one thing I am convinced, that their use has changed the bearing of many points which fall to be considered by the surgeon in the field. The severity of the primary action on the part struck, and especially the aggravated evils which follow their wounds, combine to exercise a most prejudicial influence on the surgery of the war, to which due weight has never been given. Immense comminution of bone has been their most prominent effect. The amount of laceration of the soft parts seems to depend on the distance at which the missile is fired.

"The wide-spread destruction of the bone often renders consolidation impossible, so that amputation has more frequently to be had recourse to, and the distance from the trunk at which that operation has to be performed being diminished by the same causes, the resulting mortality has been greatly increased. All who compared the dead of this with those of former wars, especially of Indian battles, were painfully struck with the greater disfigurement of the corpse caused by the conical, than by any other species of ball." (pp. 98-9.)

"If fired at short range, and if it strike a fleshy part, the conical ball produces, I think, less laceration of the soft parts than the old ball; but if the range be great, the part struck bony, with little covering of flesh, as in the case of the hand or foot, then the tearing, especially at the place of exit, is greatly more marked." (p. 105.)

The peculiar effects of the conical ball on bone are again described in a subsequent page (111). While the round ball fractures and splits the shaft of a bone if it strike about the middle, but does not produce much comminution, "the conical ball, especially that which has a broad deep cup in its base, splits and rends the bone so extensively, that narrow fragments, many inches in length, are detached, and lesser portions are thrown in all directions, crosswise at the seat of fracture, and driven into the neighbouring soft parts." The round ball has been frequently found to have split on the edge of a bone; but Dr. Macleod does not believe this can ever occur to the conical ball. In contradistinction, too, to the circuitous course frequently taken by the round ball, the conical ball seldom fails to take the shortest cut through a cavity or limb.

Chloroform. Dr. Macleod's experience leads him to speak decidedly in favour of the use of chloroform in the surgery of the field of battle. After noticing that, in the Crimean war, only a few cases, out of many thousands in which it was employed, could be obtained to illustrate its alleged pernicious effects, he says:

"I most concientiously believe that its use in our army directly saved very many lives—that many operations necessary for this end were performed by its assistance, which could not otherwise have been attempted—that these operations were more successfully, because more carefully, executed—that life was often saved even by the avoidance of pain—the *morale* of the wounded better sustained, and the courage and comfort of the surgeon increased. I think I have seen enough of its effects to conclude, that, if its action is not carried beyond the stage necessary for operation, it does not increase the depression which results from injury, but that, on the contrary, it in many instances supports the strength under operation. Its usefulness is seen in nothing more than when, by its employment, we perform operations close upon the receipt of injury, and thereby, if not entirely, at least in a great degree, are able to ward off that 'embranlement' of the nervous system which is otherwise sure to follow, and whose nature we know only by its dire effects.

"To men who had lost much blood, it had, of course, to be administered with great care, from the rapidity of its absorption in such persons; but if we do not act on broader principles in its exhibition than reckoning the number of drops which have been employed, or the part of the nervous system which we may presume to be at the time engaged, then we must expect disastrous results. It is difficult to see how its use could favour secondary hæmorrhage after operation, as some said it did; but it is, on the contrary, easy to understand how the opposite result might follow. That purulent absorption should prevail among men so broken in health as our men were, need not be explained by the employment of chloroform; and that ice would prove more useful in the slighter operative cases in field practice, few will be disposed to admit, either on the ground of time, efficiency, or opportunity. To Deputy Inspector-General Taylor we owe the practical observation, that chloroform appears to act more efficiently when administered in the open air.

"In the prolonged searches which are sometimes necessary for the extraction of foreign bodies, chloroform is useful, not only in preventing pain, but also in restaining muscular contractions, by which obstacles are thrown in the way of our extraction, which did not oppose themselves to the introduction of the body. Then much is gained in field practice by the mere avoidance of the patient's screams when undergoing operation, as it frequently happens that but a thin partition, a blanket or a few planks, intervene between him who is being operated upon, and those who wait to undergo a like trial. Thus when, as after a general engagement, a vast number of men come in quick succession to be subjected to operation, it is a point of great importance to save them from the depres-

sion and dread which the screams and groans of their comrades necessarily produce in them.

It is therefore my clear conviction, that the experience of the late war, as regards chloroform, is unequivocally favourable; that it has shown that chloroform, both directly and indirectly, saves life; that it abates a vast amount of suffering; that its use is as plainly indicated in gun-shot as in other wounds; and that, if administered with equal care, it matters not whether the operation about to be performed be necessitated by a gun-shot wound, or by any of the accidents which occur in civil life." (pp. 133-5.)

The employment of chloroform has also done much to increase the success of primary amputation as compared with secondary.

The remarks on gun-shot wounds of various parts, on excision of joints, and on primary and secondary amputation, contain many passages which, if space permitted, we should be glad to transfer to the pages of this Journal. This notice of Dr. Macleod's book, however, must be now concluded with an expression of warm thanks to him for the valuable contribution he has made to military surgery.

A Dictionary of Practical Medicine: comprising General Pathology, the Nature and Treatment of Diseases, Morbid Structures, and the Disorders especially incidental to Climates, to the Sex, and to the Different Epochs of Life; with numerous Prescriptions for the Medicines recommended; a Classification of Diseases according to Pathological Principles; a Copious Bibliography, with References; and an Appendix of approved Formulæ: the whole forming a Library of Pathology and Practical Medicine, and a Digest of Medical Literature. By James Copland, M.D., F.R.S. Parts xix and xx. London: Longman and Co. 1858.

This, the concluding part of Dr. Copland's *Dictionary*, contains the articles Vagina and Vulva (completed); Diseases of Veins; Venereal Diseases; Vertigo; Affections of Voice and Speech; Vomiting and Retching; Worms; and Suprarenal Bodies. The latter two articles are especially based on the most recent observations. That on Worms contains a copious abstract of the researches which have been recently made on the development of animal parasites; and the article Suprarenal Bodies embodies the anatomical and pathological observations of Kölliker, Harley, Leydig, Brown-Séquard, Addison, Hutchinson, etc. Added to the work are a copious alphabetical index, and a classified table of contents.

Dr. Copland's *Dictionary*, the concluding part of which lies before us, is the result of thirty years assiduous labour, carried on by one man. Such a monument of unwearied industry is one that is rarely met with; and every one will liberally accord to the author the merit to which he lays claim:

"Although few can be more sensible of the imperfections of his work than the author himself, yet he hopes the reader who attentively studies his pages will allow him the merit of industrious study of the best medical authors, and attentive observation of the causes, course, and consequences of disease, and of the effects of remedies. His labours, which have been incessant for many years, have been persisted in, under circumstances and contingencies which few could have endured. He has received no assistance in furtherance of his undertaking. .... Every line of the work was written by his own hand, and all the proofs were carefully read and corrected by himself."

"Entertaining no mean opinion of the legitimate exercise of the healing art, viewing his profession in the light in which it was held in ancient and even in more modern times, and estimating his work according to the experience and the research, to the time he has devoted to it, and to the amount of labour and sacrifices it has cost him, he feels assured that he has not laboured in vain; and he cannot doubt that it will be of essential service to many,—that suffering humanity will be benefited, and rational, learned, and scientific medical practice advanced by it. 'For his name and memory, he leaves them to men's charitable speeches and to foreign nations, and to the next age.'" (Preface, pp. xxviii-ix.)

We can only reiterate our admiration of the industry and perseverance which Dr. Copland has displayed, and, in congratulating him on the completion of his *Dictionary*, express our sincere hope that he may yet live many years in bodily health and mental vigour, to receive the grateful recognitions of the profession of which he has been an ornament and a benefactor.

Periscope.

DENTAL SURGERY.

ELECTRICITY AS AN ANÆSTHETIC IN TOOTH-DRAWING.

The occurrence of death in persons under the influence of chloroform, though comparatively rare, has caused not a few to turn over in their minds what means there might possibly be of producing anæsthesia, which should be free from danger to life. The freezing plan of Dr. James Arnott is a valuable adjunct to our anæsthetic resources, and, though less capable of extensive application than inhalation, may be employed with service in many cases. Latterly, a new plan of producing insensibility during the extraction of teeth has been devised by an American dentist, Mr. J. B. Francis of Philadelphia. In the *American Journal of Dental Science* for July 1858, we are informed that a number of operations of this kind had been rendered painless by means of electricity, in the presence of the Sub-Committee on Science and Arts constituted by the Franklin Institute of the State of Pennsylvania, and of other gentlemen. The exclusive right to the application of electricity for the producing local anæsthesia in the extraction of teeth has been secured to Mr. Francis, who thus has for a term of fourteen years the sole privilege of "making, constructing, using, and vending to others to be used," the necessary apparatus. The news of this alleged discovery, on reaching this country, has excited much interest. A considerable amount of correspondence on the subject has recently appeared in the *Times*, from which we make such extracts as will show the *modus operandi* of the agent.

Mr. W. K. Bridgman, of Norwich, describes the apparatus required, and its application, as follows:—

The apparatus is extremely simple, and consists principally of the common electro-magnetic machine used in medical electricity, a single cell and pair of plates constituting a Smee's battery, and a small electro-magnetic coil with a bundle of wires for graduating the strength of the current. One end of the thin wire conveying the secondary current is attached to the handle of the forceps, and the other end of it to a metallic handle to be placed in the hand of the patient. The instrument touching the tooth completes the circuit, and the current passes instantaneously. The wire attached to the forceps should be made to pass through an interrupting footboard, so that the continuity of the wire may be made or broken in an instant by a movement of the right foot of the operator. The advantage of this arrangement is, that it allows the instrument to be placed in the mouth without risk of producing a shock in coming in contact with the lips, cheeks, or the tongue. A hole drilled in the end of the left handle of the forceps, and the end of the wire tapered to fit rather tightly, allows the substitution of one pair of forceps for another with scarcely a moment's delay.

Some cautions, however, are necessary. Mr. Joseph Snape, Dentist to the Chester Infirmary, says:—

The current should not be applied to a tooth with an abscess at the root, to a loose tooth, or to fangs imbedded in spongy gums, as the pain in such cases appears to be increased. When the sides of a tooth are decayed nearly or quite to the gum, the tooth and surrounding parts should be rendered as dry as possible by means of French bibulous paper; fangs, when the gums are not spongy, may be extracted with the forceps after being treated in the same manner.

Again, Mr. C. Spence Bate, in the same paper, says:—

The application of the wires from an electric coil and Smee's battery, higher charged than 1½ deg., is in itself very painful

to the gums and internal mouth. It is therefore an object of much nicety to regulate the amount of electricity so as to preclude a painless operation becoming a very painful one, either from too much or too little electricity being administered. In his own case, Mr. Bate felt a bearable amount of electricity when the instrument was placed upon the tooth (under-wisdom tooth), but the same amount applied to the gums over the front teeth was excessively painful. The quantity of electricity that made the operation painless to him was not enough to kill the sensation of pain in a gentleman for a similar tooth, whereas in a lady, shortly after, it was quite successful with a less amount. In placing the instrument in the mouth, it is desirable that the broken contact in the negative rod should be restored before the instrument comes into contact with the gum, since the insertion of the former beneath the latter is one of the most painful parts of the operation in tooth extraction.

In the *Medical Times and Gazette* of last Saturday, Dr. B. W. Richardson has published an article, with the view of recording his own observations on the use of electricity as a means of producing anæsthesia:—

His attention was first drawn to the subject in the year 1853. He was engaged in investigating the influence of electricity on the blood in the living animal body. In one experiment, a small dog was subjected to an electrical shock, resulting from the discharge of a battery of seventy-two Leyden jars. Wire-chains were placed, one round the throat of the animal, meeting over the upper part of the head, the other round the body at the loins. The whole charge was at once passed through the body. The animal fell without a struggle, and lay to external appearance dead. There was no respiration for several seconds, but the heart continued beating. A little later, there was a feeble respiratory gasp. Dr. Richardson pricked the nose with the point of a scalpel, and blood issued, but no indication of sensibility followed. A minute afterwards he laid bare about an inch of the right jugular vein. He tapped the vein, drew off a few drachms of blood, passed a ligature round the vessel above the opening, brought the edges of the flesh-wound neatly together and secured them by suture. By the time he had done, the signs of reanimation were well marked; but the operation had been performed without the slightest evidence of suffering. For a little time the respiration was short and irregular; but in a few minutes the animal rose slowly, looked about him, and recovered without a bad symptom.

This was probably the first instance in which any operation was performed without pain, by means of electricity. This result of the experiment was purely accidental. The fact of the production of insensibility was, however, striking; and this fact at once suggested to him that what could be done to the whole body might possibly be done to a part.

Dr. Richardson tried the effect of passing electrical shocks of varying intensities through the limbs of animals. The shocks were severely felt; but he could never detect that at any instant after the shock the sensibility of the parts through which it had passed was at all destroyed. There was often some temporary twitching of the muscles of the limb operated on, but the merest attempt to produce pain succeeded.

Having charged twenty Leyden jars, he discharged them, either in combinations, or one after the other in rapid succession, through one of his own fingers. The shocks were painful, and when many were given, the last was felt as severely as the first; but afterwards, the finger was as sensitive to a prick from the point of a lancet as it had been previously. He tried the local effect of the continuous current for long periods, but with as little success. He passed the electro-magnetic current through one finger for long periods, modifying the intensity of the shocks; sometimes submitting the parts for periods of an hour or more to a gentle current; at other times increasing the force till the pain produced was scarcely endurable. On January 3, and on August 8, of the present year, he kept a finger for two hours thus exposed; but in these, as in all other cases, without the slightest effect in removing sensibility. While the finger was being subjected to the current, he tested its sensibility by pricking it with a lancet or needle.

In its local application, indeed, Dr. Richardson finds that the electric current restores rather than destroys sensibility. He placed the first and second fingers of the left hand in a mixture of ice and salt till they were entirely insensible to puncture. He then removed them from the mixture, and, after well drying them, he placed one wire from the electro-magnetic battery round the second finger, at a distance of three-quarters of an inch from the tip, and the other wire round the finger at the base. A gentle current was passed. For a brief period he was not conscious of the shocks; but suddenly the portion of the finger included between the wires, from being white, became red and injected, and therewith there was excited a degree of pain that was unendurable. On removing the wires, and applying cold once more, the acute pain passed off. But the most interesting point was, that while the first finger regained its normal sensibility in the course of an hour, and the second regained its normal sensibility in the parts which had been enclosed between the wires, the end of this second finger, from the point beyond which the upper wire had encircled it, remained completely insensible for four hours, and felt slightly numbed even thirty-six hours later.

From these experiments, Dr. Richardson has no alternative but to believe that the electric current cannot, according to our present knowledge of its application, be made practicable for the production of local anæsthesia. The only way by which he believes electric shocks can in any way be said to remove pain locally, is, that the pain which they excite creates a diversion, so that any new pain which may be inflicted on the part is not felt the less, but is lost in some degree in the pain which was pre-existent. The schoolboy tells his new comrade that he can remove a hair from his head without the removal being felt. The skilful operator seizes a hair with his left thumb and finger, pulls it out quickly, and at the very moment strikes the head of his dupe a smart blow with his flat right hand. The operation is performed, and, it may be, without the pain which would have been elicited by a simple pull. The pain, however, is not removed, but diverted. When Dr. Richardson's finger was painfully affected by the electric current, the entrance of the lancet or needle point into the skin caused sometimes a more acute, sometimes a less defined, pain than is ordinary. Mr. Louis Parnell, who allowed him to perform some experiments on his finger, felt the same sensations.

The first experiment related shows that a powerful electric shock, sent through the whole body, will produce insensibility; why, therefore, should it not have the same effect in its local application? A dose of aconite tincture will render a body generally insensible to pain; a drop of the same tincture, put on the lip, will produce numbness of the lip. Here is brought out at once a general and a local effect, each alike in kind, but different in degree. Why, then, should not the same obtain with the electric shock? Dr. Snow has described, and to Dr. Richardson's mind proved, that the sensibility of the body may be destroyed in two ways. First, it may be destroyed by the direct effect of some benumbing agent on the extremities of the nerves of the part; secondly, by the effect of the agent on the centres of intelligence, *i. e.*, by the destruction of consciousness. Thus, the effect of some narcotic vapours, taken into the system at large, may even be contrasted: amylene, for example, acts mainly on the extremities of the sensory nerves, interfering but feebly with the consciousness. Ether, on the other hand, suspends sensibility in proportion as it destroys consciousness. When a powerful electric shock is sent through an animal body, it destroys sensibility, not because it is a local anæsthetic, but because it strikes out at a blow the consciousness. The animal for the time is dead to all impressions, pleasant or painful. An animal stunned by a blow, or in syncope, is in the same condition. In this explanation Dr. Richardson finds the reason why electricity, as generally applied, *did*, and, as locally applied, did *not*, produce insensibility.

From Dr. Richardson's experiments, therefore, it would appear that electricity, locally applied, can only produce insensibility to a pain by inducing another—perhaps a greater—pain, and thus diverting the attention.

New Hospital in Vienna. The *Standard*, of September 3rd, publishes a letter from the Emperor of Austria to the Minister of the Interior, in which his Majesty states his intention of celebrating the birth of his first-born son by founding a new hospital in his capital; and orders that, in honour of the prince, it shall bear the name of the Rodolphe Foundation. The hospital must be built in a style of architecture in harmony with its destination, and must contain accommodation for one thousand patients, without distinction of origin or religion. The emperor devotes to this purpose a space of ground of 8800 square fathoms in extent; and orders that the expenses of building and management shall be defrayed by the general funds of the hospitals. He directs the Minister of the Interior to adopt the necessary measures for procuring plans and estimates, and to report thereon to him.

British Medical Journal.

SATURDAY, SEPTEMBER 18th, 1858.

THE DRAINAGE OF THE METROPOLIS.

It is evident that the Metropolitan Commissioners are paralysed by the amount of responsibility thrown upon them. Parliament has determined to give them rope enough, but they hesitate to hang themselves. The scheme of their engineer to score London with vast intercepting sewers has been so admirably handled by Mr. F. O. Ward, in a letter to Mr. Coningham, the member for Brighton, that we do not believe there can be any further doubt in the minds of those who study the subject, that it is nothing less than monstrous. The great fundamental objection to that scheme is, that it confounds together two things that should be kept rigidly separate, the rain-fall and the sewage pipes. The moment you mix the two, you spoil both; the rain-fall, because it is no longer a pure feeder for the river; and the sewage, because, so diluted, it becomes useless as a fertiliser of the land—hence that which should be considered property to be administered, is converted into a nuisance to be got rid of. The scheme of intercepting drains is so vast, and embraces within its arms so large an area of water-shed, that without doubt the river will materially suffer from it. Not only do we propose to rob the stream high up of all the water drawn from it by the different companies, but the natural rain-fall that should flow into it within the limits of the metropolis is to be intercepted, and conveyed away with the sewage in enormous drains out into the ocean! Well may Mr. Ward protest against the monstrous nature of this provision—this mutilation of our noble river. But supposing these vast culverts to be completed, it is admitted, even by the engineer, that, in long and copious rain-falls, they will not be able to bear the strain put upon them; the sudden influx of such a volume of water will be too great for even their capacity to suddenly discharge: hence he proposes that, in connexion with them, there shall be a system of floodgates constructed, to open, in such emergencies, into the river,—that, in great rain-falls, in short, the whole sewage of the metropolis shall be flushed into the Thames by the pressure of this unmanageable flood. Now, as we well know that great sewers are nothing more than elongated cesspools, and that, in ordinary times, it is calculated that the sewage stagnating below in this great metropolis is equal to the evacuations *of the whole population of Europe* for one day of twenty-four hours, we may be left to imagine the depth of pollution to which, every now and then, the Metropolitan Commissioners' engineer proposes to reduce the Thames. It would, without doubt, be better to submit to the present amount of chronic filth in our river, than to a scheme such as this, which proposes to purchase a general exemption from contamination by an occasional evacuation, such as would render the river for days little better than a sewer itself.

Mr. Ward, in drawing attention to these radical defects in the proposed scheme for the purification of the Thames and the drainage of the metropolis, says very truly, that the real battle of interception must be fought, not with these enormous sewers, but in the houses themselves, with modest drain-pipes. Here, he says very truly, we could at once simplify the problem by separating the house-drainage, rich with all the elements of a vigorous vegetation, from the mere land-drainage, or rainfall, which, once mixed with it, only destroys it. "*The sewage to the land, the rain-fall to the river*," is, as he remarks, the true formula for all our sanitary engineers to work upon. The sewage from the houses, unlike the rainfall, is a fixed and manageable quantity, consisting of the human excreta and the pipe-water daily circulating through each house, enriched by the organic impurities which it takes up in its passage: for the conveyance of this valuable stream out into the country, and thence to the land, comparatively small pipe-drains, which form no deposit, would be amply sufficient. The rain-fall, on the contrary, which is so unmanageable in its suddenness and quantity, should be confined to the existing sewers, which would conduct it uncontaminated to the river. If we are ever to utilise the native guano which now ferments beneath our feet, as Edinburgh and other towns have already done with such admirable effect, this system of separating mere rain-fall from the sewage must come into operation; and that we shall ultimately condescend to reinvigorate our fields with this "matter out of its right place", we have not the smallest doubt.

To the provincial towns, it is of the utmost importance that the metropolitan scheme, if it is to be used as an example, shall be based upon correct principles; for what holds good of London and the Thames, holds good in an inferior degree of other large towns of the empire, which are at present poisoning their inhabitants, polluting their rivers, and starving their fields, by a system which ensures stagnation *versus* circulation of the *excreta* of the inhabitants. Medical men, of all others, are most interested in the proper administration of this most valuable property, which, misplaced, gives rise to such suffering and death, but which, properly applied, makes the landscape smile with plenty, and helps to build up a vigorous and energetic race.

THE WEEK.

The Parisian medical journals of the present week contain the statutes of an institution which has been founded under the name of the General Medical Provident and Mutual Aid Association of France (*Association Générale de prévoyance et de secours mutuels de Médecins de France*). The Association is composed of local societies formed under its influence, as well as of similar institutions which may join it for the purpose of carrying out their common work. The objects of the Association, as well as of each of its component societies, is to afford aid to members reduced to distress by age, infirmities, sickness, or undeserved misfortunes; to aid the widows, children, and parental relations left without resources by deceased members; to aid and protect the members of the Association; to maintain, by its moral influence, the practice of medicine in a state useful to the public and consonant with the honour of the profession; to found, at some future period, an annuity fund; and to found and organise such institutions as may be required to carry out its objects. The Association will act in two principal ways: first, by organising local societies, as well as a central society which shall include army and navy surgeons, French medical men having no fixed residence, and

practitioners in the *arrondissements* who may not belong to any of the local societies; secondly, by combining all these societies, as well as those already existing, and by establishing means for the distribution of aid of all kinds which may come within its province. As members of the Association, are admissible, legally qualified medical men in France, Corsica, Algeria, and the colonies; all army and navy surgeons; and every French medical man who has been entrusted with duty out of the empire. The annual subscription is twelve *francs* (ten shillings) payable on March 1 in each year. No one can be admitted into the Association or continue a member of it, who is proved guilty of acts derogatory to his own honour or to the dignity of the profession. The last article of the statutes (which have received the approbation of the French government,) names the first officers and committee. M. Rayer is president; M. Serres, vice-president; M. Amédée Latour (editor of *L'Union Médicale*, and to whom the formation of the Association is in great measure due,) is secretary; M. Bertillon is assistant-secretary; and among the committee we notice the names of Andral, Claude Bernard, Bouillaud, Cruveilhier, Jobert de Lamballe, Larrey, Michel Lévy, Ricord, and other leading men in the Parisian medical world. It is now several months since the Association was first projected—at least in the French medical press. From time to time, the results of the steady perseverance of its promoters have been brought before us, and have given us much gratification; and we would now heartily congratulate the medical profession in France on having thus fully organised an Association, the object of which is the aid of their distressed brethren.

A country associate has communicated to us a curious case of madness or fury in a domestic hen, which came under his observation a few days ago. The bird had two chickens a week old. She suddenly pecked one violently, as if she desired to kill it. The chicken was rescued from her; and, soon afterwards, during the feeding of the poultry, she quarrelled and fought with a full-grown hen. The combatants, however, were soon separated. The hen and her offspring were apparently in perfect health before this extraordinary outbreak on the part of the mother.

A remarkable epizootic disease appears to have been lately prevailing among birds. At Welbeck in Nottinghamshire, game, especially partridges, is said to be very abundant. During the present season, however, an extensive mortality has prevailed among this tribe: hundreds have been found dead in all directions without any obvious cause. On dissection, it seems that a kind of tapeworm is discovered in the intestines. We remember to have heard, a year or two ago, that large numbers of the grouse in Scotland had died in a similarly unaccountable manner, and that in these, too, a form of tænia was found. It is remarked, in the case of the partridges, that the breed has lately been decreasing, in consequence of the birds having continued for many years without fresh mates, so that the race wears out for want of new blood. We mention this subject, believing that it may prove acceptable to many of our readers as affording the materials for an interesting pathological inquiry. If it is a tænia that infests the birds, what is its embryonic form? and where is the *habitat* of this?

Association Intelligence.

DR. ALISON'S ADDRESS.

WE had hoped to be able before this to complete the publication of the able address of Dr. Alison, of which a part has already appeared in this JOURNAL. Our distinguished President has, however, been unfortunately prevented by illness from sending us the remaining portion.

BRANCH MEETINGS TO BE HELD.

NAME OF BRANCH.	PLACE OF MEETING.	DATE.
EAST YORK AND NORTH LINCOLN. [General Meeting.]	Beverley Arms, Beverley.	Thursday, Sept. 23rd, 2½ P.M.

SOUTH-EASTERN BRANCH:

SOCIAL AND SCIENTIFIC MEETINGS OF THE MEMBERS RESIDENT IN ROCHESTER, MAIDSTONE, GRAVESEND, DARTFORD, AND THEIR VICINITIES.

Social and scientific meetings of members of the South-Eastern Branch resident in Rochester, Maidstone, Gravesend, Dartford, and their vicinities, will be held on the undermentioned days:—

Friday, September 24th, 1858, at 5.15, at the Crown Inn, Rochester.

Friday, October 29th, 1858, at 4.30, at the Town Hall, Maidstone.

Friday, March 25th, 1859, at 3.30, at the Town Hall, Gravesend.

Friday, April 29th, 1859, at 3.30, at the Town Hall, Dartford.

The members will dine together at the Crown Inn, Rochester, on Friday, September 24th, at 7 P.M., after the first meeting. Tickets 5*s*., exclusive of wine. Gentlemen intending to dine, are requested to signify their intention on or before Friday, September 17th, to Dr. Martin, Rochester; or Mr. Dulvey, Brompton.

After the dinner, a train will leave Rochester for London, at 9.30; and for Maidstone, at 9.40.

The members resident in this district will be gratified by the attendance and assistance of any of the members of the British Medical Association.

JAMES DULVEY, *Honorary Secretary.*

Brompton, Chatham.

ADMISSION OF MEMBERS, AND PAYMENT OF SUBSCRIPTIONS.

THE General Secretary of the British Medical Association begs to call the attention of members to the Laws regarding the ADMISSION of MEMBERS, and the PAYMENT of their SUBSCRIPTIONS.

"*Admission of Members.* Any qualified medical practitioner, not disqualified by any bye-law, who shall be recommended as eligible by any *three* members, shall be admitted a member at any time by the Committee of Council, or by the Council of any Branch."

"*Subscriptions.* The subscription to the Association shall be One Guinea annually; and each member, on paying his subscription, shall be entitled to receive the publications of the Association for the current year. The subscription shall date from the 1st January in each year, and shall be considered as due unless notice of withdrawal be given in writing to the Secretary on or before the 25th of December previous."

Either of the following modes of payment may be adopted:—

1. Payment by Post-Office Order to the Treasurer (Sir C. Hastings, M.D., Worcester), or to the undersigned.

2. Payment to the Secretary of the Branch to which the member belongs.

3. Members residing in the Metropolis and vicinity can make their payments through the publisher of the BRITISH MEDICAL JOURNAL, Mr. Thomas John Honeyman, 37, Great Queen Street, Lincoln's Inn Fields, W.C.

PHILIP H. WILLIAMS, M.D., *General Secretary.*

Worcester, September 1858.

LETTERS AND COMMUNICATIONS.

Letters or communications for the Journal should be addressed to Dr. Wynter, Coleherne Court, Old Brompton, S.W.

Letters regarding the business department of the Journal, and corrected proofs, should be sent to 37, Great Queen Street, Lincoln's Inn Fields, W.C.

Editor's Letter Box.

TREATMENT OF DIPHTHERITE.

Letter from D. Mackinder, M.D.

Sir,—In reply to the letter of our associate Mr. Crossman, allow me to state that I have invariably ordered my diphtheritic patients to take out-door exercise whenever they could do so without much fatigue.

During the past twelve months, I have attended about four hundred cases of the epidemic throat affection with considerable success, owing in a great measure to my having looked for the cases, and thus cut short the disease in its early stage.

My plan of treatment has been heroically tonic. The chlorates of potassa and soda, hydrochloric acid, tincture of sesquichloride of iron, quina, occasional alteratives, free application of nitrate of silver in solid and strong solution (especially in the condition of small granular deposit, when it was most decidedly beneficial), the most liberal dietary, and fresh air.

My reports have appeared in the journal of my friend Dr. B. W. Richardson, the *Sanitary Review*, for the last three quarters; and, had time permitted, I should have read a paper on Diphtheria at the Edinburgh meeting. That paper has since been forwarded to Dr. McWilliam, who will read it, at an early meeting in the ensuing session, at the Epidemiological Society.

I am, etc., D. Mackinder.

Gainsborough, September 14th, 1858.

CHEAP JOHNS OF THE PROFESSION.

Sir,—Who can wonder that the guardians of our poor should think their medical officers well paid for their services, when there are those in our profession who will attend cases at a lower rate than is allowed by the Poor-law Board? For instance, in the parish in which I reside, there is one of our associates who attends midwifery three miles from home for ten shillings, including a fortnight's after attendance, with medicines (if required) and gratuitous vaccination. He extracts teeth for sixpence, vaccinates three in a family for a shilling, and charges a penny a powder. The majority of those who are attended in their confinements for ten shillings are paupers when they or any member of their family are ill; and, therefore, their children should be vaccinated by the union medical officer, who would receive his extra pay.

I am, etc., A Lover of Fair Play.

September 14th, 1858.

TESTIMONIALS FOR MEDICAL APPOINTMENTS.

Sir,—The advertisement for the last three weeks on the cover of the Journal, for an apothecary for the Stockton District, has struck me as a good sign of the times. "Each candidate must be qualified to be registered under the new Medical Act. Testimonials of his good moral character must be transmitted," etc. This is as it should be, and suggests the question, Why should "testimonials" of any kind, besides *moral character and services rendered*, be longer tolerated among us? During my career, I have seen numbers of loose sheets, and one goodly octavo, filled with laudatory notices of certain candidates for certain appointments; and the wonder certainly is great, how, with such transcendent abilities, they should have sunk into obscurity.

But, seriously, who does not blush to think, on the one hand, of the forgetfulness of our professors and hospital physicians and surgeons of the catholicity of their position, when they torture their consciences into the manufacture of trumpery platitudes in commendation of men accidentally or otherwise brought under their notice, whom they have never either actually examined or employed; and, on the other, of the "toadyism" that can ask it?

I am, etc., Alpha.

Southampton, September 14th, 1858.

Medical News.

BIRTHS, MARRIAGES, DEATHS, AND APPOINTMENTS.

** In these lists, an asterisk is prefixed to the names of Members of the Association.*

BIRTHS.

Mackay. On September 11th, at Hertford, the wife of Allan Douglas Mackay, M.B.Oxon., of a son.

Pink. On September 11th, at Greenwich, the wife of Henry N. Pink, Esq., Surgeon, of a son.

Pring. On September 9th, at Weston-super-Mare, the wife of James H. Pring, M.D., of a daughter.

Woolhouse. On September 6th, at 18, Gloucester Gardens, Hyde Park, the wife of George R. Woolhouse, Esq., Surgeon, prematurely, of a son.

MARRIAGES.

Lane—Shackle. Lane, William R., Esq., Assistant-Surgeon Grenadier Guards, to Julia, eldest daughter of E. Shackle, Esq., of Hayes, Middlesex, on September 7th.

Moffat—Gay. *Moffat, Robert, M.D., of Kingskettle, Scotland, to Annie Kedzlie, second daughter of John Gay, Esq., of Fisherrow, Musselburgh, on September 13th.

Foquett—Soward. Foquett, Henry R., Esq., Surgeon, of Ilfracombe, to Fanny P., widow of the late J. Turton Soward, Esq., at Ilfracombe, on September 8th.

DEATHS.

Reynolds, William V. E., Esq., Surgeon in the Royal Navy, and Knight of the Legion of Honour, of consumption, contracted in the zealous discharge of his duties during the Crimean war, at Wilmont, Kingstown, Ireland, aged 31, on September 9th.

Smith. On September 10th, at the Pines, Weybridge, Mary, wife of Southwood Smith, M.D.

HEALTH OF LONDON:—WEEK ENDING SEPTEMBER 11TH, 1858.

[*From the Registrar-General's Report.*]

In the week that ended on Saturday, September 11th, the number of deaths registered in London was 1060, of which 521 were the deaths of males and 539 those of females. In the ten years 1848-57, the average number of deaths in the weeks corresponding with last week was 1457; but as the deaths of last week occurred in an increased population, it is necessary for the purpose of comparison to raise the average proportionally to the increase, in which case it will become 1603. The public health is therefore so far satisfactory, that the deaths now returned were less by 543 than the number which would have occurred under the average rate of mortality, and although the great number of deaths at two periods when cholera was epidemic must be taken into account, yet there can be no doubt that London enjoys an improved state of health at the present time.

But if the deaths of last week had been according to the rate which exists in the healthiest districts of England, they would only have been 799; hence it appears that 261 persons died from circumstances that constitute the comparative insalubrity of the metropolis.

The births of last week were in excess of the deaths in the same period by 477.

The mortality from diarrhœa is rapidly subsiding; in the two previous weeks the deaths from it were 146 and 120, last week they were only 69. Scarlatina, on the contrary, shows a slight increase, 115 fatal cases having been registered; amongst others, three children, daughters of a dyer, residing at 46, Flower Street, Spitalfields, died of this disease. Whooping-cough carried off 29 children, and measles 21. Three deaths occurred from small-pox. Four persons died from cholera, including three children and a blacksmith, aged 27 years, who died in Charing Cross Hospital, after thirty-six hours illness. The deaths from phthisis (or consumption), which in the previous week were 119, rose last week to 162, the average being 139. A little boy died, after an illness of three hours, from eating bitter almonds; and a labourer, aged 36 years, died in St. Bartholomew's Hospital from pyæmia. Three persons

died last week at the following advanced ages:—91, 92, and 93 years.

Last week the births of 777 boys and 760 girls, in all 1,537 children, were registered in London. In the ten corresponding weeks of the years 1848-57, the average number, corrected for increase of population, was 1,668.

At the Royal Observatory, Greenwich, the mean height of the barometer in the week was 29·792 in. The highest reading was 30·06 in., at the end of the week. The mean temperature of the air in the week was 59·4°, which is 1·7° above the temperature of the same week on an average of 43 years, as determined by Mr. Glaisher. The highest point attained by the thermometer in the shade was 73·0°, on Thursday, the 9th inst.; the lowest was 45·5°, on Monday; the range of the week was therefore 27·5°. The mean daily range was 17·5°. The difference between the mean dew-point temperature and air temperature was 6·7°. The mean degree of humidity of the air was 79, complete saturation being represented by 100. The mean temperature of the water of the Thames was 61·7°. The general direction of the wind was south-west. Rain fell on four days during the week. There were thunder and lightning on Monday.

THE HEALTH AND EFFICIENCY OF THE BRITISH TROOPS IN INDIA.

The following suggestions have been made by Mr. J. R. Martin to the Chairman of the Court of Directors:—

1. It is stated by Colonel Sir Alexander Tulloch, as the result of investigations in the War-Office, made by desire of Mr. Sidney Herbert, that among British officers and soldiers of the Queen's and Company's armies serving in the East Indies, there occurred, from 1815 to 1855 inclusive, a total mortality, exclusive of casualties, of about 100,000 men, "the greater portion of whose lives might have been saved had better localities been selected for military occupation in that country."

2. Dr. Burke, late Inspector-General of Hospitals in Bengal, has stated that, in the station of Secunderabad alone, during thirty years of its occupancy by British soldiers, the cost to the State on account of loss of life amounted to £150,000, estimating each soldier as worth £100. But, estimating the loss of life mentioned by Sir A. Tulloch at the same valuation of £100 each man, we arrive at a loss in money of £10,000,000 sterling.

3. Then there has been enormous waste of the public funds on account of barracks and hospitals placed in stations so unhealthy that they were subsequently abandoned. The buildings for the European troops at Berhampore, Bengal, abandoned since 1835 on account of its unhealthiness, are stated by the finance authorities of Calcutta to have cost since 1757 nearly £17,000,000 sterling.* Tennant declares that, up to this time, the sums expended by the East India Company for the accommodation of their European troops, "if laid out at the compound interest of the country, would, at a determinate period not very remote, have equalled the national debt."

4. Looking to these enormous sums, often absolutely worse than wasted, of what account in the comparison has been the cost of the medical establishments of India? how truly saving of the public revenues must be a well ordered and well directed and a well contented medical corps! In truth, the importance of an efficient medical establishment is so great that we cannot put a money value on it.

5. As regards the preservation of European health in India, and indeed in all tropical climates, the due selection of locality is the first consideration; and next in importance stand the structural arrangements in barracks and hospitals.

6. As to barracks, provided the site be of sufficient elevation, well cleared, drained, and levelled, with a good water supply, the material need not, I think, be of a costly character—well constructed huts for the accommodation of ten or twelve men forming a good protection against the inclemencies of weather. Such simple and cheap structures will, I believe, prove more conducive to the health of the European soldier in the mountain ranges of India than the most costly barrack; and the same may be said of hospital huts for the reception of the same number of men—viz., ten or twelve. In stations on the arid hot plains of India, the same structures would answer well; but if large brick-built barracks and hospitals be preferred, they should be very spacious, double roofed, and raised on arches.

* "Influence of Tropical Climates", p. 424.

7. The considerations involved in the subject of the last paragraph are of the utmost importance, whether viewed in a sanitary or financial light; and the subject has hitherto been altogether neglected in locating troops in most of our foreign possessions, although our experiences in all our European campaigns have demonstrated that the soldiers who were hutted fared well, while such as were massed in barracks and general hospitals perished at enormous rates.

8. This experience has been uniformly accordant, whether the climate was hot or cold, whether our men were serving in Holland or in the Crimea.

9. The Irish sufferers from typhus during the famine, who were massed in workhouses and hospitals, perished in enormous numbers; whereas those who were thrown along the roads and under the hedges recovered in goodly proportions; of so much more avail is pure air towards the restoration of health than a fine building. The thorough ventilation through the openings and crevices of huts supplies the sick with what they don't obtain in our ill constructed barracks and hospitals—namely, pure air.

10. They were not palaces that were constructed by order of Sir Charles Metcalfe on the mountains of Jamaica, but a substantial form of hut, which, on a pure and elevated soil, was all that was required. Buildings such as those just referred to, constructed of the most ordinary materials, have been found to assure health; while Indian experiences prove that costliness of materials and splendour of structure, apart from a good locality, will not prevent disease.

11. The importance of determining the true physical characters, and the exact medical topography of all the mountain ranges throughout India—especially of those situated in provinces in which it is desirable that British troops may reside—has now become imperative. European soldiers cannot maintain health or vigour in the plains, and the selection of suitable mountain stations has become more than ever a State necessity.

12. The experiences of the Himalaya positions, of those of the Neilgherry mountains, and of those of Ceylon, as sanitary stations, prove that by residence on their respective elevations the European is removed greatly above the range of the malarious fevers of India. But while this great and valuable fact is admitted, it is undoubtedly true that he is, in too many instances, carried into the range of another class of diseases—namely, that of bowel complaints. This circumstance has been found in various of our mountain positions to constitute a serious drawback from the otherwise great benefits derived from a residence in them.

13. Another disadvantage of the hill stations hitherto occupied by us in the East Indies was noticed by me when serving in Bengal—namely, that while the hill climates are permanently serviceable against the malarious fevers of the country, their influences in conducing to the cure of these and other diseases is limited in extent; the soldier being troubled with relapses of his disorders on descending into the plains, unless kept in the hills for a long time. The mountain ranges, therefore, which have hitherto been occupied by Europeans stand forth as possessing climates preservative against fevers, and as such we must improve them, and use them wherever required.

14. When, on the other hand, we find the British soldier lingering under chronic or structural diseases contracted on the plains, a removal to the seaboard, or to an insular sanitarium, or, still better, to England, will be found the only effective means of restoration; and this last resource of medicine should never be denied to him, for the climate of the mountains, invaluable in prevention, will not cure disease.

15. Referring to what has been stated in paragraph 12, how are we to escape from the admitted evils hitherto experienced in the very high positions occupied by us? Where and how are we to obtain that amount of elevation which, while it removes the European out of the range of malarious fevers, may not place him in that of an exhausting and dangerous diarrhœa? This is the great desideratum—one hitherto unascertained, because unsought for; yet no examinations which may fall short of ascertaining this desired medium elevation can be deemed satisfactory of our sanitary wants.

16. In the climates of yellow fever, an elevation of 2,500 feet is found sufficient to remove the European from the locality of pestilence, without placing him in that of bowel disorders; and in the mountain stations of Jamaica, the mortality among British soldiers is found to exceed but little, if at all, that of the same class of men in the United Kingdom.

17. Let us, then, have a series of careful and scientific ex-

aminations, by competent persons, of the lower and medium ranges of hills throughout India, in order that the great sanitary problem may be solved in a conclusive manner—namely, the providing a place of resort for our European troops which shall be alike free from malarious fevers and from disorders of the bowels. That such procurable localities are to be found in the East, as they have been in the West, is my firm belief, and let them be perseveringly sought for.

18. Let the solitary hills—those islands on the plains—be sought for, and carefully examined; they give sanitary excellences peculiar to themselves.

Lastly, let there be appointed for the sanitary duties of the army, at each of the Indian Presidencies, a medical officer of health—an officer of scientific attainments and of rank, who shall be attached to the quartermaster-general's department; we shall thus add to the department of military topography that of medical topography. The medical officer of health should preserve in his office, for the use of the scientific persons concerned, plans and models of the best barracks and hospitals which may be from time to time approved by the military powers of Europe, in order that the most recent improvements may be rendered available wherever buildings of the nature indicated may be found necessary.

The duties of the medical officer of health should be, in peace, to examine and report on all sites and on the condition of camps, temporary military stations and cantonments, on convalescent stations and sanitaria, on mountain ranges suitable for troops, and on solitary mountains and their capabilities, on the plans and structure of barracks and hospitals, and on everything relating to the health and comfort of the soldier.

In war he should be attached to the quartermaster-general in the field, and be always in advance with this officer, so as to master the medical topography of the scene of action; and, where military reasons of imperative necessity do not overrule sanitary considerations, the advice and opinion of the medical officer of health should be received on the sites of camps, whether temporary or permanent, and on all matters having reference to the sanitary condition of the camp.

In a recent report to Her Majesty by a Royal Commission, of which I was a member, and which was ordered to inquire into the organisation, government, and direction of the medical department of the British army, the appointment of a medical officer of health, as long previously recommended by me for the service of the Indian army, was strongly urged upon Her Majesty's attention, with a view to the great benefits to be expected from the services of such an officer.

J. R. Martin.

Grosvenor Street, London, August 12th, 1858.

ALLEGED HUMAN PETRIFACTION.

A most extraordinary case has been related in an American paper—the *Alta California;* the narrator's name being given as Dr. Friedrich Lichterberger, of Fort Langley, Frazer River. The case was that of a Prussian, named Ernest Fluchterspiegel, a miner, who, while searching for gold, drank the "water of crystallisation" (amounting to about half a pint) which he found in the centre of a *geode*, or round mass of quartz, containing a cavity lined with crystals. Before reaching the camp of his companions, the man felt pain and weight in the epigastric and left hypochondriac regions. On his arrival, he was speechless; cold sweats covered his face; the heart's action became violent and irregular; and he died in fifteen minutes. Rigidity set in at once; and in two hours and a half the body was stiff as a board. Dr. Lichterberger states that he made a *post mortem* examination, with the following results:—

"On making an incision from a point opposite the xiphoid cartilage to the umbilicus, through the skin, superficial fascia, and abdominal muscles, the knife gave a grating sensation; and, applying a lens of medium power, I observed that the smaller blood-vessels were solid and apparently ossified. The stomach and duodenum were then removed from the abdomen, and on slitting them open, I found several hard masses of the size of a hazel-nut, looking like gall-stones, and evidently composed of biliary matter, but as hard as the hardest quartz. Evidences of food also existed, and a large mass containing fibres of muscle and lumps of undigested potatoes, moulded to the form of the antrum pylori, were taken out, of the like solidity. This solidification of the contents of the stomach, of the food and the bile—their conversion, in fact, into stone—struck me with astonishment, the more so, as the coats of the stomach appeared very nearly normal. I next made an opening into the cavity of the thorax, and, pushing back the detached sternum over the face, discovered the heart *in situ*, and of a natural colour; but it was as hard as, and strongly resembled, a piece of red jasper, exhibiting here and there those varied colours which give such beauty to that mineral. By means of a small hatchet, I separated the heart from its connection with the aorta, pulmonary artery, and vena cava, and with some difficulty was able to break it in pieces. The right ventricle and auricle were composed centrally of a solid, of a dark purple colour, which was evidently the venous blood petrified, while the left chambers vied in the colour of their central portions with the richest carbuncle. The larger blood-vessels were all as rigid as pipe-stems, and in some cases the petrified blood could be cracked out from the veins, exhibiting a beautiful moulding upon the valves of the latter. The lungs were noticed, on opening the cavity of the pleura, not to be collapsed at all, the usual contractability, due to the elastic fibrous tissue in their composition, being overcome by the rigidity of the capillaries which kept them firm and expanded. The brain exhibited nothing extraordinary, except the petrifaction of the blood-vessels."

Dr. Lichterberger says that he detected silica in large quantities by tests; and concluded that the water of the *geode* must have contained a large quantity of silicic acid in solution, which entered into combination with the bile, the albuminose of the ingesta, and the blood.

It is rarely that a really new thing is met with; and this remarkable phenomenon of petrifaction of the human body is by no means without a parallel. In the veracious narratives of Huckaback the sailor—a second Sindbad—recorded in Captain Marryat's *Pacha of Many Tales*, there is an account of a remarkable island in which was a "golden fountain". Observing, in his visit, several statues of blue chalcedony in various not very graceful attitudes, Huckaback's curiosity was excited; and, being on terms of intimacy with the princess of the island, he was enabled to obtain from her an explanation. "Such are the effects," she told him, "of intoxication from the waters of the golden fountain. They contain in solution so large a quantity of the matter which by mineralogists is denominated silex, that, once allow the senses to be overpowered by repeated draughts, and in a few hours the effects you behold will be produced." On leaving the island, Huckaback took some of the water of the "golden fountain with him. In a scarcity of water, it was greedily drunk by his shipmates, who thereupon became transformed into statues of blue chalcedony. Huckaback determined to speculate in these, as specimens of works of art; but, one becoming accidentally broken to pieces, he examined it; and found it "very wonderful to witness how every part of the human body was changed into flint, of a colour corresponding with that which it had been when living. The heart was red; and when I arrived in Italy, I had several seals made from it, which were pronounced by the lapidaries who cut them to be of the finest blood-red cornelian. I have now a piece of the dark stone of which the liver was composed, which I keep for striking a light. As it afterwards proved, almost all of it was valuable; for the alternate fat and lean formed a variety of beautiful onyxes and sardonyx, which I disposed of very advantageously to the cameo-engravers." The similarity between the effects produced in the two cases is certainly most remarkable.

New Medical Knight. Mr. J. W. Fisher, the Surgeon-in-Chief of the Metropolitan Police, has had conferred upon him the honour of knighthood by Her Majesty. Sir J. W. Fisher was Surgeon to the old Bow Street Police Force, and has been Superintending-Surgeon of the present police since its establishment in 1828.

TO CORRESPONDENTS.

Communications have been received from:— Dr. Bower Harrison; Mr. F. Jones; Dr. Graily Hewitt; Mr. J. K. Spender; Mr. W. C. Gagos; Mr. T. Holmes; Mr. J. A. Locking; Dr. T. Inman; Mr. William Martin; Mr. Holmes Coote; Dr. John Watson; Dr. W. H. Ashley; Mr. Oliver Pemberton; Mr. Booth Eddison; Mr. J. Kirkwood; A. Lover of Fair Play; Dr. Draper Mackinder; Mr. Ravenscroft; Mr. T. S. Walker; Mr. G. M. Humphry; and Mr. W. B. Norcott.

BOOKS RECEIVED.

[* *An Asterisk is prefixed to the names of Members of the Association.*]

1. Lectures on the Diseases of Women. By Charles West, M.D. Part II. Diseases of the Ovaries, etc. London: John Churchill. 1858.
2. The True Physiological Method of Restoring Persons apparently Drowned or Dead: and of Resuscitating Still-born Children. By H. R. Silvester, B.A., M.D.London. London: John Churchill. 1858.

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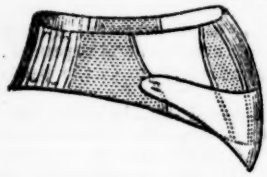

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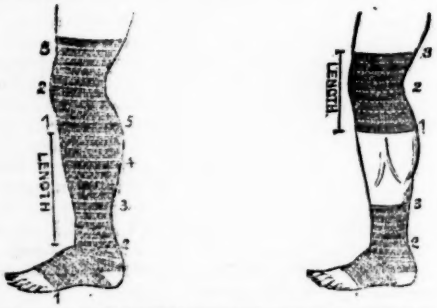

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Medical School, Old Park, Bristol, Sept. 13, 1858.